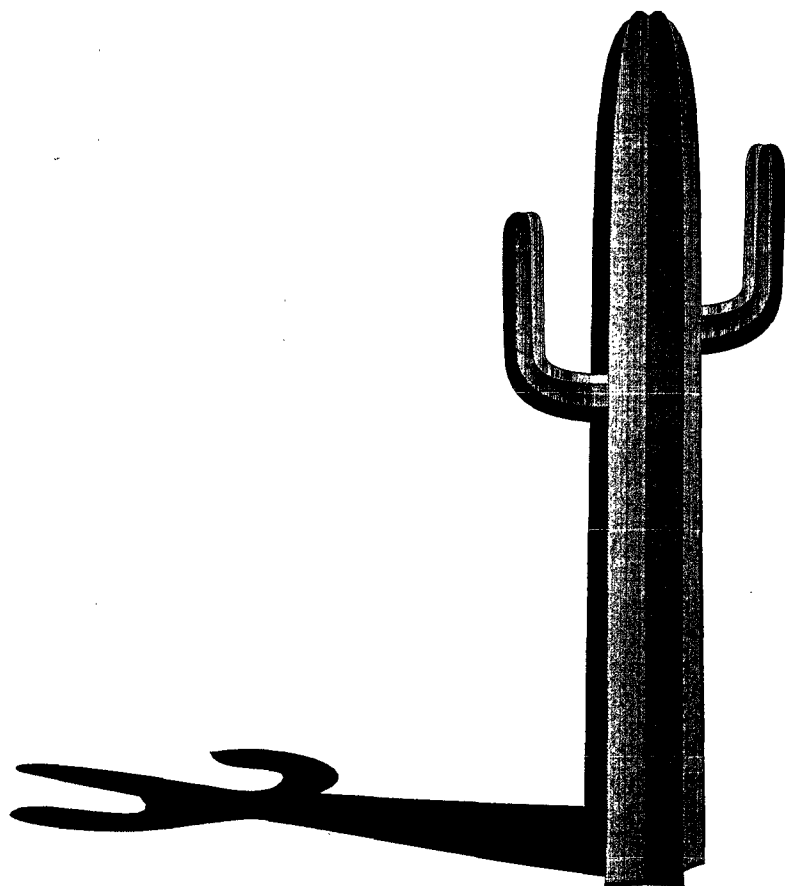


ASSESSING AND MANAGING RISKS IN A  
DEMOCRATIC SOCIETY



PHOENIX, ARIZONA

SOCIETY FOR RISK ANALYSIS

PRELIMINARY PROGRAM



ANNUAL MEETING AND EXPOSITION

HILTON SOUTH MOUNTAIN

DECEMBER 6-9, 1998

# Society For Risk Analysis

## Preliminary Program



### Phoenix

The Society for Risk Analysis is pleased to hold their Annual Meeting in Phoenix, AZ. With its world-class facilities, and diverse range of historical and cultural attractions, Phoenix is always a favorite meeting location. The Hilton South Mountain is the site of this year's Annual Meeting.

### Climate/Dress Code

The Valley of the Sun is the number-one destination of the Southwest with more than 300 days of sunshine a year. The average December temperature is a high of 65°. Casual dressing is the hallmark of Arizona and the *dress code for the 1998 SRA Annual Meeting will be casual.*

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## ***Meeting Highlights***

### **SRA Annual Meeting**

The theme of this year's meeting is Assessing and Managing Risks. Assessing and managing risks, whether in health care or in finance and banking, affects all of us. Thus improving the foundations through risk assessment and risk management should be the domain of interest of all members of SRA.

### **Roundtable Discussions**

On Tuesday, December 9 from 5:30-7:00 pm, a roundtable discussion will take place. Please see page 7 for further details.



### **Special Theme/Topics**

Risk Management and Risk Assessment topics will be a highlighted theme throughout this meeting.

### **Plenary Sessions** (See page 7 for details)

Monday, December 7; 8:30-10:00 am

Wednesday, December 9; 8:30-10:00 am

## ***Pre-Meeting Symposium Announcement***

### **Partnerships and Risk-Based Decision-Making: How can the public, private, and nonprofit sectors get the job done?**

Friday December 4, 1998

Hilton South Mountain – Phoenix, Arizona

This day-long pre-annual meeting symposium will critically review current regulatory models for public/private partnerships and discuss implementation of the Clean Air Act's residual risk provisions as a case example for determining what it would take for such partnerships to play a significant role in risk-based regulatory decision-making. The symposium will feature prominent speakers as well as ample time for audience discussion and participation.

Cost per person: \$90

Watch your mail for a detailed program.  
Coming in September!

**SUNDAY,  
DECEMBER 6**

4:00-7:00 PM  
Registration  
W. REGISTRATION DESK  
5:30-6:30 PM  
Welcome Reception

**MONDAY,  
DECEMBER 7**

8:00 AM-4:00 PM  
Registration  
W. REGISTRATION DESK

8:30-10:00 AM  
Plenary Session

10:00 AM-4:00 PM  
Exhibits  
CORONADO/CORTEZ  
NOON-1:30 PM  
Lunch - *Speaker TBA*  
S. MOUNTAIN BALLROOM

**SONORA**

**Monday**

10:30 am - noon  
1-Toxicological Data & Expert  
Judgment... - Poster Platform

1:30 - 3:00 pm  
11-Symposium: Use of Risk  
Information in Business ...

3:30 - 5:00 pm  
21-Risk and the Armed Forces

**Tuesday**

8:30 - 10:00 am  
31-Stakeholders in Risk Man-  
agement - Pt 1

10:30 am - noon  
41-Stakeholders in Risk Man-  
agement - Pt 2

1:30 - 3:00 pm  
51-Approaches to Risk Assess-  
ment & Risk Mgmt- Pt 1

3:30 - 5:20 pm  
61-Approaches to Risk Assess-  
ment & Risk Mgmt- Pt 2

**KACHINA**

**Monday**

10:30 am - noon  
2-Risk Communication - Poster  
Platform

1:30 - 3:00 pm  
12-Risk Analysis in the Courts

3:30 - 5:20 pm  
22-Symposium: Similarities and  
Differences in Chemical ...

**Tuesday**

8:30 - 10:00 am  
32-Risk Perception - Poster Plat-  
form.

10:30 am - noon  
42-Mechanism-Motivated Mod-  
eling - Poster Platform

1:30 - 3:00 pm  
52-Symposium: Trust - Pt 1

3:30 - 5:00 pm  
62-Symposium: Trust - Pt 2

**SAGUARO 1**

**Monday**

10:30 am - noon  
3-Risk Communications in  
Democratic Decision-Making

1:30 - 3:00 pm  
13-Effects of Risk Communica-  
tion

3:30 - 5:20 pm  
23-Media Coverage of Risk

**Tuesday**

8:30 - 10:00 am  
33-Determinants of Risk Per-  
ception

10:30 am - noon  
43-Effective Methods of Risk  
Communication

1:30 - 3:00 pm  
53-Influences of Risk Percep-  
tions

3:30 - 5:20 pm  
63-Stakeholder Involvement

**Wednesday**

10:30 am - noon  
71-Symposium: Drinking Wa-  
ter Communication & Policy

1:30 - 3:00 pm  
80-Symposium: Risk & Stigma

**SAUGUARO 2**

**Monday**

10:30 am - noon  
4-Symposium: Pro-Active Inter-  
agency Partnership ... - Pt 1

1:30 - 3:00 pm  
14-Symposium: Pro-Active In-  
teragency Partnership ... - Pt 2

3:30 - 5:00 pm  
24-Symposium: Pro-Active In-  
teragency Partnership - Pt 3

**Tuesday**

8:30 - 10:00 am  
34-Symposium: Application of the  
Framework ...(FRAMES) - Pt 1

10:30 am - noon  
44-Symposium: Application of the  
Framework ...(FRAMES) - Pt 2

1:30 - 3:00 pm  
54-Attributing Risk: Population  
Risk

3:30 - 5:20 pm  
64-Symposium: GRESP as an  
Experiment in Obtaining ...

**Wednesday**

10:30 am - noon  
72-Role of Risk Assessment in  
Resolving Liability Disputes

1:30 - 3:00 pm  
81-Inhalation Exposure &  
Markers

**PALO VERDE 1**

**Monday**

10:30 am - noon  
5-Symposium: The Balance of  
Nature - Can Toxicologists ...

1:30 - 3:00 pm  
15-Engineering Systems - Risk  
Issues

3:30 - 5:20 pm  
25-Looking to the Future

**Tuesday**

8:30 - 10:00 am  
35-Modeling Exposure Over  
Global Ranges

10:30 am - noon  
45-Symposium: Rats! (Rodent  
Bioassays & Risk Assessment)

1:30 - 3:00 pm  
55-Ecological Risks: Multiple  
Stressors & Multiple ... - Pt 1

3:30 - 5:20 pm  
65-Ecological Risks: Multiple  
Stressors & Multiple ... - Pt 2

**Wednesday**

10:30 am - noon  
73-Communicating Health  
Risk

1:30 - 3:00 pm  
82-Symposium: Risk Educa-  
tion

<b>PALO VERDE 2</b>	<b>MOHAVE</b>	<b>PUEBLO</b>	<b>AZTEC</b>	<b>PAPAGO</b>	<b>TUESDAY, DECEMBER 8</b>
<b>Monday</b>	<b>Monday</b>	<b>Monday</b>	<b>Monday</b>	<b>Monday</b>	
10:30 am - noon 6-Symposium: Assessing Farm-to-Table Risks of E.Coli:...	10:30 am - noon 7-Setting Thresholds and Uniform Standards	10:30 am - noon 8-Multi-Disciplinary Issues in Cancer Risk Assess: 1,3-...	10:30 am - noon 9-Risk Perception Across Cultures	10:30 am - noon 10-Distributional Analysis	8:00 AM-4:00 PM Registration W. REGISTRATION DESK  10:00 AM-4:00 PM Exhibits CORONADO/CORTEZ  NOON-1:30 PM Lunch - Business Meeting S. MOUNTAIN BALLROOM
1:30 - 3:00 pm 16-Symposium: A Risk Assessment of Salmonella ... - Pt 1	1:30 - 3:20 pm 17-Setting Priorities for Regulatory Decision Making	1:30 - 3:00 pm 18-Symposium: Are Traditional Uncertainty Factors Large...	1:30 - 3:00 pm 19-Risk Communications & Environmental Decision Making	1:30 - 3:00 pm 20-Predicting Target Tissue Dose	
3:30 - 5:00 pm 26-Symposium: A Risk Assessment of Salmonella ... - Pt 2	3:30 - 5:20 pm 27-New Approaches to Decision Making	3:30 - 5:00 pm 28-Symposium: Probabilistic Methods in Aggregate and ...	3:30 - 5:00 pm 29-Formulating Effective Risk Messages	3:30 - 5:20 pm 30-Symposium: Aggregate Exposure Assessment for Pesticides: ...	
<b>Tuesday</b>	<b>Tuesday</b>	<b>Tuesday</b>	<b>Tuesday</b>	<b>Tuesday</b>	<b>WEDNESDAY, DECEMBER 9</b>
8:30 - 10:00 am 36-Symposium: Uncertainty Analysis in QRA: Strengths ...	8:30 - 10:00 am 37-Risk, Science and Law: Toxic Injury Lawsuits - Pt 1	8:30 - 10:00 am 38-Symposium: Good Risk Assessment Practices: Making ...	8:30 - 10:00 am 39-Symposium: Assessing & Managing Risks Under ... - Pt 1	8:30 - 10:00 am 40-Symposium: Implementation of the FQPA of 1996: ... - Pt 1	8:00 AM-NOON Registration W. REGISTRATION DESK
10:30 am - 12:20 pm 46-Integrating Risk Assessment & Benefit/Cost Analysis	10:30 am - noon 47-Risk, Science and Law: Toxic Injury Lawsuits - Pt 2	10:30 am - noon 48-Microbial Risk	10:30 am - noon 49-Symposium: Assessing & Managing Risks Under ... - Pt 2	10:30 am - 12:20 pm 50-Symposium: Implementation of the FQPA of 1996: ... - Pt 2	8:30 AM-NOON Plenary Session
1:30 - 3:00 pm 56-Symposium: Dermal Pathway Issues	1:30 - 3:00 pm 57-Symposium: Regulatory Improvement I: Policy Issues	1:30 - 3:00 pm 58-Symposium: Risk Assessment for Replicating Organisms	1:30 - 3:00 pm 59-Alternative Dose-Response Models	1:30 - 3:00 pm 60-Heavy Metal Exposure	10:00 AM-NOON Exhibits CORONADO/CORTEZ
3:30 - 5:00 pm 66-Use of Internet Resources for Risk Communication...	3:30 - 5:00 pm 67-Risk Assessment: A Burning Issue in Regulatory Reform	3:30 - 5:00 pm 68-Chemical, Microbes and the Balance...	3:30 - 5:00 pm 69-Evaluating Alternatives for Regulatory Decision Making	3:30 - 5:00 pm 70-Symposium: Dose-Response Relationships in Occupational...	
<b>Wednesday</b>	<b>Wednesday</b>	<b>Wednesday</b>	<b>Wednesday</b>	<b>Wednesday</b>	
	<b>GRAND CANYON</b>	<b>NAVAJO</b>	<b>HOPi</b>	<b>PIMA</b>	<b>APACHE</b>
10:30 am - noon 74-Public Perception - Public Participation - Pt 1	10:30 am - 12:20 pm 75-Reconsidering Cancer Risk	10:30 am - noon 76-Food Consumption - Poster Platform	10:30 am - noon 77-Symposium: Toward a Quantitative Definition ... - Pt 1	10:30 am - noon 78-Symposium: Performing Risk Assessments When ... - Pt 1	10:30 am - noon 79-Symposium: The Relationship of Economics and ...
1:30 - 3:00 pm 83-Public Perception - Public Participation - Pt 2		1:30 - 3:00 pm 84-Symposium: Time as a Risk Metric	1:30 - 3:00 pm 85-Symposium: Toward a Quantitative Definition... - Pt 2	1:30 - 3:00 pm 86-Symposium: Performing Risk Assessments When ... - Pt 2	1:30 - 3:00 pm 87-Methods in Probabilistic Risk Assessment



## Registration Hours

Sunday, December 6 .....	4-7 PM
Monday, December 7 .....	8 AM-4 PM
Tuesday, December 8 .....	8 AM-4 PM
Wednesday, December 9 .....	8 AM-2 PM

## Conference Events



### SRA Council Meetings

Sunday, 12/6, 1-5 PM  
Tuesday, 12/8, 7-9 PM

### SRA Welcome Reception – (Cash Bar)

Sunday, 12/6 – 5:30-6:30 PM

### Luncheons (Dietary Restrictions – Notify Registration Personnel)

Monday (Speaker TBA) and Tuesday (SRA Business Meeting) included in full registration.

Wednesday cash and carry lunch will be available.

Noon-1:30 PM

Poster Sessions – Authors will be standing by their posters for Poster Session 1 on Monday, 3-3:30 pm and Tuesday, 10-10:30 AM and for Poster Session 2 on Tuesday, 3-3:30 pm and Wednesday, 10-10:30 am.

SRA New Member Breakfast – Monday, 12/7 – 7:30 AM



Membership Meeting – Monday, 12/7 – 6:30-7:30 PM

SRA Chapters and Sections Breakfast – Tuesday, 12/8 – 7:00 AM

## Specialty Group Meetings



This year the Specialty Group meetings have been scheduled for different days in order to meet the needs of the attendees. Please plan to attend any group meetings that may interest you.

### Sunday, 12/6

6:00-7:30 PM – Risk Science & Law

### Monday, 12/7

5:15 PM – Risk Communication

5:15 PM – Food

7:00 PM – Ecological Risk Assessment Business Meeting

7:30 PM – Exposure Assessment Business Meeting

### Tuesday, 12/8

7:30-8:30 AM – Engineering

5:15-6:15 PM – Dose Response and Food Specialty Groups Joint Mixer

## Exhibition – Coronado/Cortez



December 7-8 9:45 AM-4:00 PM

December 9 9:45 AM-Noon

At the SRA exhibition, attendees have a first-hand opportunity to examine, talk about, and learn from the products and services on display.

To request a booth at the SRA exhibition, contact Lori Strong or Sue Burk at SRA Headquarters, (703) 790-1745, email: [SRA@BurkInc.com](mailto:SRA@BurkInc.com).

## Travel Program

America West Airlines has been designated as the official carrier for the attendees of the Society for Risk Analysis Annual Meeting, December 6-9, 1998, in Phoenix, AZ. America West is offering special discounted meeting fares! To take advantage of these savings, travel America West round-trip from anywhere within the US and Canada. These convention discounts are valid between December 1-14, 1998.

To take advantage of America West's quality service, convenient schedules and special fares, call America West at 1-800-548-7575 between 6:00 AM-7:00 PM, Phoenix Time. Reference the CAMS Code # 7180.

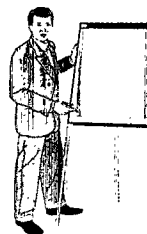
### AVIS Car Rental — Special Rates

AVIS Car Rental has joined the SRA to offer you special low car rental rates which apply one week prior to and after the dates of the meeting. All AVIS rentals include automatic transmission and unlimited free mileage. Weekly rates require a five day minimum stay.

#### Special Rates:

Subcompact	\$32.99/day	\$125.99/week
Compact	\$35.99/day	\$143.99/week
Intermediate	\$39.99/day	\$158.99/week
Fullsize (4dr)	\$43.99/day	\$188.99/week
Luxury	\$72.99/day	\$308.99/week

Call AVIS at 1-800-331-1600. Request AWD # J095496 for special rates.



## Workshops

Sunday, December 6

Full Day Workshops are from 8:00 AM-5:00 PM and Cost: Preregistration \$260; On-Site Registration \$320

Half Day Workshop is 8:00 AM-Noon and Costs: Preregistration \$130; On-Site Registration \$160

### Workshop 1 — Whole Day: Microbial Risk Assessment Methodology

*Organizers:* USDA/FSIS and FDA/CFSAN

This full day workshop builds on material presented at the 1997 SRA workshop in Washington DC which was organized by Michael McElvaine and Chuck Haas. The emphasis for this technical workshop is on methodological issues that impact microbial risk assessment from farm to table. Topics to be discussed are quantitating pathogen exposure on the farm, stochastic process and bacterial growth, bacterial strain adaptation: variability, process modeling and thermal heat transfer applications, and dose-response modeling I and II. A panel discussion will conclude the workshop.

### Workshop 2 — Whole Day: Integrated Human Health and Environmental Impact Modeling

*Organizer:* Regina Lundgren, Pacific Northwest National Laboratory

The purpose of this workshop is to introduce new users and orient previous users to the new versions of popular risk assessment software MEPAS (US DOE), GENII (US EPA and US NRC), and FRAMES (PNNL). It is the goal that each student should be able to return home and immediately apply risk assessment techniques learned to their project needs.

**Overview of FRAMES** — discussion of the purpose of the Framework of Risk Analysis in Multimedia Environmental Systems (FRAMES), how it functions, and key features that facilitate the use of GENII and MEPAS, as well as other models

**Structure of Integrated Modeling** — discussion of the specific programming aspects of the Integrated Models to be displayed, including input/output specifications, key variables, the use of pre- and post-processors, and interface with other popular software programs

**Overview of MEPAS** — discussion of the Multimedia Environmental Pollutant Assessment System (MEPAS V4.0) software developed by the PNNL for the US DOE, its purpose and uses, its strengths and weaknesses, and tips on how to use it effectively

**Overview of GENII** — discussion of the Generation II of the Handford Dosimetry Code (GENII), its purpose and uses, its strengths and weaknesses, and tips on how to use it effectively

**Practices** — For both models under FRAMES, the presentation team will conduct hands-on, guided case studies with set input parameters and expected outcomes to facilitate attendee understanding of the system.

### **Workshop 3—Whole Day: Beyond Point Estimates: Risk Assessment Using Interval, Fuzzy and Probabilistic Arithmetic**

*Organizer:* Scott Person, Applied Biomathematics

Interval analysis, fuzzy arithmetic and probability bounds analysis are very general techniques for propagating uncertainty through mathematical calculations. These methods can be used even when data are far too sparse for conventional Monte Carlo or related probabilistic methods. Interval analysis underlies any reasonable conception of worst case analysis or theoretical upper bound estimates and it can also provide a check on the results of a full-blown probabilistic risk analysis that is often simple enough for hand calculation. It is useful for analyzing uncertainty of all kinds no matter what its nature or source, although the approach is generally less powerful than other methods when empirical information is abundant. We use interval analysis as the exemplar calculus for computing with uncertain quantities, and show how additional information can be incorporated to tighten the resulting risk estimates in a way that does not require unjustified assumptions. Although the basics for uncertainty arithmetic are simple enough for anyone to master, some important details can be very subtle. Inattention to such details is common in risk analysis and it occasionally leads to seriously erroneous conclusions. Several numerical examples will be worked out during the workshop. A workshop booklet and software disk will be provided to participants. The booklet contains hard copies of transparency illustrations used in the presentations, numerical examples, and references, including instructions for accessing the various Internet resources for interval analysis, fuzzy arithmetic and probabilistic arithmetic. The software disk contains source code and executable programs for doing arithmetic with uncertain quantities. A limited number of computers will be available at the workshop, but participants are encouraged to bring portable computers to run the provided software.

### **Workshop 4—Whole Day: Workshop on Probabilistic Methods in Risk Assessment**

*Organizers:* David Burmaster, Alceon and Kimberly Thompson, Harvard School of Public Health

This full day workshop features eleven speakers and is designed to appeal to risk managers, experienced risk assessors and risk assessors beginning to use probabilistic methods. The topics to be discussed will include introduction to probabilistic methods in risk assessment, variability and uncertainty, methods for fitting parametric distributions to data, use and interpretation of numerical methods for characterizing uncertainty in frequency distributions for variability, non-parametric distribution fitting for second-order RVs, technical challenges of modeling time-varying exposures, modeling exposure events over time in aggregate and cumulative risk assessments under the Food Quality Protection Act, modeling event distributions in time, introduction to Bayesian methods, computational Bayesian methods for exposure assessment, and the inescapable role of judgement in exposure and risk analysis. The workshop will conclude with a question and discussion period.

### **Workshop 5—Whole Day: Communicating Risk Management Programs to the Public**

*Organizer:* Virginia Sublet, Ohio State University

This workshop will provide attendees with a basic understanding of why risk communication is important/difficult to achieve and the basic principles that are necessary to be successful in communicating with the public. In addition, it will provide students with an understanding of the different routes of communication and the skills to build messages which address community concerns. Lastly, it will concentrate on the lessons learned from communicating worst-case scenarios and the research currently being conducted in this area. Although this workshop has been developed to address risk communication needs for risk management programs, the skills learned during this educational experience can be applied to all areas where effective communication with the public is desired. The target audience for this workshop includes toxicologists, engineers, risk assessment scientists, attorneys, exposure assessment scientists, communication researchers/practitioners, plant environmental officers, environmental health and safety, company public information officers, plant managers, etc.

### **Workshop 6—Half Day: Communicating About Health, Safety and Environmental Risks to the Public**

*Organizers:* Sharon M. Friedman and Kenneth A. Friedman, Lehigh University and Science Communication Associates, and Robert Griffin, Center for Mass Media Research, Marquette University.

This workshop will introduce technical experts, managers and others to the problems of communicating about complex and uncertain health, safety and environmental issues with various stakeholders including the public and the mass media. It will give those who attend an understanding of what is currently known from research about the effectiveness of risk communication techniques, and provide suggestions about what it takes to be a successful risk communicator. It will also examine how to communicate about health and safety issues to many stakeholders including employees, and how to get ahead of the curve with long-term planning. Finally, it will review mass media coverage of health, safety and environmental information and provide guidelines for interacting successfully with the media. The workshop will include useful principles for anyone who must communicate about health, safety and environmental issues to a variety of audiences. The leaders of the workshop have given many risk communication workshops for various industries and government agencies throughout the United States, including one by satellite for technical experts.



## Tour Program

**Saturday, December 5**

### Southwestern Jeep Tour

Noon-4 pm Cost: Pre reg \$70/On site \$76

Prepare for a day of Southwestern fun and frolics! Hold on to your hats and glasses - this here is the wildest ride in the west!



This adventure will take you in spacious four-wheel-drive vehicles on a tour of the Sonoran Desert below the McDowell Mountains, the Verde River and the Utery Pass Territory in the Tonto National Forest. En route to the desert, the drivers (always willing to talk with whoever will listen) will take the opportunity to discuss some of Arizona's rich history. Guests will hear some scary tales of the Superstition Mountains, some tall tales about the history of gold mining in Arizona, as well as some fascinating tales about the survival techniques of the Native Americans who once inhabited the land. Once you've arrived at the heart of the desert, your guide will take you on a botanical walk to identify native cacti, desert plants and native critters. You'll also get to see some evidence of ancient Native American culture!

**Sunday, December 6**

### Desert Trails Horseback Ride

8 am-Noon Cost: Pre reg \$55/On site \$63

Riding horseback is the perfect way to experience the beautiful Sonoran desert up-close. Walk with nature as the guides point out the many unique desert plants and wildlife. Your adventure ride will take you up and down hills, through rivers, washes and mesquite groves. There is simply nothing like it!

*Recommended attire:* Long pants, closed-toe shoes, sunscreen, hat and sunglasses.

### Sedona Excursion

8 am-4 pm Cost: Pre reg \$64/On site \$72

Drifting clouds, towering pinnacles, and sheer canyon walls create a magical setting for the Red Rock country of Sedona. In sharp contrast to the bright blue sky, monoliths of vivid red sandstone rise as if cast adrift from the Mogollon Rim. Oak Creek Canyon, with its dramatic red rock ridges etched over millions of years by wind and seas, slices dramatically through the scene.

First stop on the way to the Red Rock Country is Montezuma Castle National Monument. This towering castle of stone and mortar was built by the cliff dwelling Sinagua

Indians in the 12th or 13th century, and remains as a memorial to the mysterious culture that ruled this land hundreds of years ago. As you gaze up at this impressive structure, you will wonder what life must have been like for the Sinagua Indians responsible for its construction.

Next, you will be transported to the village of Tlaquepaque (T-lockey-pockey), which lies in the valley of Sedona at the mouth of Oak Creek. Bearing the name of a village outside Guadalajara, Mexico, Tlaquepaque boasts the fine craftsmanship of local artisans, along with beautiful and unusual gifts from around the world. Take some time to stroll along the tiled walkways among arched doorways, or unwind near one of many gracious fountains and admire the colorful flowers which decorate this village and give it such a distinct Mexican flavor.

After spending some time browsing through the boutiques, specialty shops and galleries, enjoy a delightful lunch al fresco (included in fee) at one of the many local restaurants.

**Monday, December 7**

### Heard Museum & Desert Botanical Gardens Tour

9 am-1 pm Cost: Pre reg \$52/On site \$60

#### *Land & People of the Southwest*

Tour two of the Southwest's most unique visitor attractions: the Heard Museum and the Desert Botanical Garden.

The internationally acclaimed Heard Museum houses one of the most unique and extensive exhibits on the culture and art of the Indians of the American Southwest to be found anywhere in the world. Within the galleries of this Spanish Colonial-style building guests will find extensive collections of clothing, tools, weapons, pieces of handcrafted jewelry, baskets, pottery, textiles, and paintings; all of which serve to educate visitors on the resourcefulness and artistic abilities of the Southwest Indians.

A main focus of the Heard Museum is to trace the development of these arts and crafts from prehistoric times to the present. Perhaps the most notable collection in the museum is that of the Kachina dolls. These beautiful dolls, painstakingly carved by Hopi and Zuni craftsmen, line the walls of an entire room. These magnificent creations hold great historical, cultural and spiritual significance to the Hopi and Zuni peoples, and are only considered authentic if they are made from a single root of a cottonwood tree and carved by a male tribal member. Prior to touring the Gardens, guests will be treated to a luncheon featuring imaginative desert foods served on a picturesque outdoor terrace.

One of the finest collections of desert plants in the world, the Desert Botanical Garden displays more than 15,000 desert plants in a spectacular outdoor setting. Guests will enjoy strolling along the paved 1.5 mile trail which winds through the gardens. Signs along the trail list names of the different species while guidebooks explain the useful qualities of each plant. Set up along the trail are several volunteers willing to answer questions or give demonstrations on special topics. In addition, a 3-acre permanent exhibit with authentic prehistoric structures shows how Sonoran Desert dwellers have used native plants for thousands of years for food, construction, fiber, and medicines.

## **Tuesday, December 8**

### **Taliesin West Tour**

**8 am-1 pm      Cost: Pre reg \$52/On site \$60**

Enjoy a fascinating visit to the world renowned westward home of Frank Lloyd Wright. Your tour begins with round-trip transport to Taliesin West, where your guests will be greeted by Taliesin staff and guides.

Constructed in 1937 from rocks and sand gathered from the desert floor, Taliesin West is now a National Historic Landmark. Initially, Taliesin West was a winter home for Wright's Wisconsin school. Students lucky enough to study at Taliesin lived in tents and simple shelters, and now, over 50 years later, still do! In keeping with its original design, the site serves as a living, working, educational facility to this day. Noted for its unusual form, this architectural masterpiece is an excellent example of the way in which Frank Lloyd Wright attempted to harmonize his creations with their natural surroundings.

Upon arrival at the home in the midst of 600 acres of rugged Sonoran desert, guests will enjoy an extensive 90 minute "Insights Tour," led by a guide who is passionate about Wright's work. Guests will visit the Cabaret Cinema, Music Pavilion, Seminar Theater, and Wright's private office - all linked by dramatic terraces, gardens, and walk ways overlooking the rugged Sonoran Desert and Valley below. Knowledgeable guides explain how the architecture relates to the natural desert and provide an overview of Wright's basic theories of design.

During your tour, you will have an opportunity to talk with Wright associates, enjoy leisurely refreshments in the colorful fellowship dining room, visit the dramatic living room and cabaret theater, walk to the historic sun cottage and more. . .

Monday, December 7

**8:30-10:00 AM - Plenary Session**

**Opening Welcome**

Yacov Haimes, SRA President

Gail Charnley, SRA President-Elect

**Cultural Legacies: Shaping the Future of Risk Analysis**

**1998 Program Committee**

Chair: Gail Charnley

Richard Belzer

Robin Cantor

Annie Jarabek

John Keller

Katy Kunzer

Stanley Levinson

Michael McElvaine

Charles Menzie

Resha Putzrath

Richard Rich

Larisa Rudenکو

Susan Youngren

Tuesday, December 8

**5:30-7:00 PM—Roundtable Discussion**

**University Roundtable**

♦ *Moderator: Robin Cantor; LECG, Inc.*

The Third Annual University Roundtable will feature presentations from three universities offering full-course programs in risk analysis or related subject areas. Carnegie Mellon, the Harvard School of Public Health, and the Johns Hopkins School of Public Health will each present highlights from their course syllabus to the group. Adequate time will be allowed for an open discussion to follow the three presentations. Students are especially encouraged to attend this session.

Wednesday, December 9

**8:30-10:00 AM—Plenary Session**

**Assessing and Managing Risks: Science, Public Values, and the Marketplace**

**Membership Forum and Opportunity to Identify Issues/Ask Questions**

The Society for Risk Analysis values its knowledgeable members and appreciates hearing perspectives from all the diverse disciplines represented. The webpage was established and electronic abstract submission was instituted in response to recommendations made at the New Orleans meeting. As suggested, we piloted a test last year in Washington, DC and now poster platform discussion sessions are part of the meeting venue. The membership forum is your opportunity to meet with Council members of both the Membership and Electronic Media Committees to let us know of other issues important to you and provide feedback on how we are doing. Get involved in instituting change you may want to see happen. Plan to attend the Membership Forum.

10:30 am - Noon

Room: Sonora

Toxicological Data & Expert Judgment in Case-Specific Risk Characterization - Poster Platform

Chair: L. Rhomberg

1.01 Strategy for Assessing the Human Health Risks of MTBE in Drinking Water. *J. M. Davis; US EPA, RTP, NC*

1.02 Is TCDD a Threshold Carcinogen? A Quantitative Analysis of the Epidemiological Data. *C. R. Kirman, S. M. Hays, L. Aykward, N. J. Karch, D. J. Paustenbach; ChemRisk; Karch & Associates*

1.03 Using Expert Elicitation to Develop a Quantitative Risk Assessment for Methylene Chloride. *M. L. Gargas, C. R. Kirman, P. Dugard, S. M. Hays; ChemRisk; Halogenated Solvents Industry Alliance*

1.04 Reproductive Hazard Identification: Findings and Limitations in Studies of Women Exposed to Benzene. *A. J. Dunn, L. Zeise, M. Golub; Office of Environmental Health Hazard Assessment, California*

1.05 UVB-Induced Immunomodulation: Estimation of the Health Risk. *J. Garssen, W. Slob, H. Van Loveren; National Institute of Public Health and the Environment, The Netherlands*

1.06 Discussion on Harmonisation of Uncertainty Analysis in Human Health Risk Assessment. *T. G. Vermeire, H. Stevenson, M. N. Pieters, W. Slob, B. C. Hakker; National Institute of Public Health and the Environment, The Netherlands; TNO Nutrition and Food Research Institute, The Netherlands*

1.07 The Data-Generating Process for Measures of Relative Toxicity: Implications for Risk Assessment. *K. P. Brand, L. Rhomberg, J. S. Evans; Harvard SPH*

10:30 am - Noon

Room: Kachina

Risk Communication - Poster Platform

Chair: J. Till

2.01 RF Safety: Creating Culturally Neutral Risk Communications on Wireless Base Stations. *J. E. Ebrgott, D. T. Sean; Lucent Technologies*

2.02 Risk Communication in Practice - A Case Study in Western Australia. *M. E. Farinha; Curtin University of Technology, Australia.*

2.03 The Relevance of Risk Perception Research for Megan's Law. *J. C. Fox, R. Gowda; University of Oklahoma*

2.04 The Mt. Pinatubo Experience-How Third World Politics Characterizes Risk. *C. R. Villamin; Science and Technology Information Institute, Philippines*

2.05 Why Humans are So Bad at Interpreting Probabilities. *S. Ferson, L. R. Ginzburg; Applied Biomathematics; State University of NY, Stonybrook*

2.06 Managing Pandora's Open Box: Labeling as Risk Displacement. *S. H. Priest; Texas A&M University*

2.07 Environmental Risk Communication and Decision Making: Lesson Learned from the Real World. *M. C. von Braun; University of Idaho*

10:30 am - Noon

Room: Saguaro 1

Risk Communications in Democratic Decision-Making

Chair: J. M. Gutteling

10:30 3.01 The Systematic Planning of Risk Communication: The Next Step. *J. M. Gutteling; University of Twente, The Netherlands.*

10:50 3.02 Tackling Risk Perception within the Democratic Process: A Canadian Case Study. *C. M. Purtil, M. H. Flowers; Radian International, Canada; Radian International LLC, New Mexico*

11:10 3.03 Three Examples of Public Participation in Environmental Decision Making. *S. L. Sharp, J. E. Till; BP Oil Company; Risk Assessment Corporation*

11:30 3.04 Facts and Values: Characterizing Analytical Perspectives in Environmental Risk Debates. *T. J. Keating; Harvard University*

10:30 am - Noon

Room: Saguaro 2

Symposium: Pro-Active Interagency Partnership to Address Perchlorate Contamination - Part 1

Co-Chairs: A. Jarabek and D. Rogers

10:30 4.01 Overview and History of Perchlorate: Formation of the Interagency Steering Committee(IPSC). *D. Rogers; Air Force Materials Command*

10:50 4.02 Occurrence of Perchlorate in Groundwater and Surface Water Supplies in the United States. *K. P. Mayer; US-EPA, San Francisco*

11:10 4.03 Stakeholder Identification and Involvement on Perchlorate Issues. *C. M. McCracken; US EPA, San Francisco*

10:30 am - Noon

Room: Palo Verde 1

Symposium: The Balance of Nature: Can Toxicologists and Ecologists Come to Consensus?

Chair: S. Ferson

10:30 5.01 Straining the Gnat and Swallowing the Camel: The Importance of Scale and Uncertainty in Assessing Ecological Risk. *T. S. Bridges; US Army Corps of Engineers*

10:50 5.02 Gleaning Ecological Risks from Sediment Toxicity Tests. *B. L. McGee; Wye Research and Education Center*

11:10 5.03 Competing Issues in Contaminated Site Risk Assessment: A Case Study. *S. M. Hoover, R. A. Hill; Golder Associates, Canada; Triton Environmental Consultants, Ltd., Canada.*

11:30 5.04 A New Diet of Worms: Ecologists, Toxicologists, and Regulators. *B. K. Hope; Oregon Department of Environmental Quality*

10:30 am - Noon

Room: Palo Verde 2

Symposium: Assessing Farm-to-Table Risks of *E. Coli* 0157:H7 in Hamburger

Chair: J. Kuzma

10:30 6.01  
On-Farm Module of the Pathway to Assess Farm-to-Table Risks of *E. Coli* 0157:H7 in Hamburger. M. Powell, R. Christenson, E. Ebel; USDA

10:50 6.02  
Slaughter/Processing Module of the Pathway Analysis to Assess Farm-to-Table Risks of *E. Coli* 0157:H7 in Hamburger. T. Roberts, J. Kuzma, L. Cannon, I. Walls; USDA, Washington, DC; National Food Processors Association

11:10 6.03  
Retail/Consumption Module of the Pathway Analysis to Assess Farm-to-Table Risks of *E. Coli* 0157:H7 in Hamburger. D. Soderberg, W. Schlosser, K. Ralston, C. Custer; USDA, Washington, DC

11:30 6.04  
Pathway Analysis to Assess Farm-to-Table Risks of *E. Coli* 0157:H7 in Hamburger. P. Coleman, P. Frenzen, I. S. Kim, J. Scott, T. Roberts; USDA, Washington, DC, National Food Processors Association

10:30 am - Noon

Room: Mohave

Setting Thresholds and Uniform Standards

Chair: J. Keller

10:30 7.01  
How Thresholds Affect Risk Assessment, Management, and Communication. R. M. Putzraib; Georgetown Risk Group

10:50 7.02  
Uncertainty Analysis in Regulations Assessment: The Case of Arsenic in Chile. R. O'Ryan, M. Diaz; Universidad de Chile República, Chile

11:10 7.03  
Streamlining Ecological Risk Assessments Through Establishing Default Regional Assessment Endpoints. P. D. Birkner, R. A. Brewer, L. Himmelbauer; Shannon & Wilson; Alaska Department of Environmental Conservation

11:30 7.04  
The Use of Default Values in Risk-Based Regulation. V. M. Bier; University of Wisconsin

10:30 am - Noon

Room: Pueblo

Symposium: Multi-Disciplinary Issues in Cancer Risk Assessment: 1, 3-Butadiene Case Study

Chair: E. Anderson

10:30 8.01  
Carcinogenicity Risk Assessment of 1, 3-Butadiene Based on Occupational Studies. J. Liccione, E. Anderson; Sciences International, Inc.

10:50 8.02  
Consideration of Metabolism and Mechanistic Data in the Carcinogenicity Risk Assessment of 1, 3-Butadiene. E. Anderson, J. Liccione; Sciences International, Inc.

11:10 8.03  
The Interim Nature of the EPA Draft Cancer Risk Characterization for 1, 3-Butadiene Based on Human Epidemiological Data. R. L. Sietken, Jr.; Sietken, Inc.

11:30 8.04  
Sources, Projected Emission Trends and Exposure Issues for 1, 3 Butadiene. R. T. Paul; American Automobile Manufacturers Association.

10:30 am - Noon

Room: Aztec

Risk Perception Across Cultures

Chair: B. Rohrmann

10:30 9.01  
Risk Perception in "Western" and "Eastern" Countries - A Cross-Cultural Study. B. Rohrmann; University of Melbourne, Australia

10:50 9.02  
Research on Risk Analysis and Perception as Instruments of Risk Management in Portugal. J. M. Palma-Oliveira, J. A. Shatkin; University of Lisbon, Portugal; Menzie-Cura & Associates, Inc.

11:10 9.03  
Considerations on Methods and Strategies for Risk Communication Addressed to the General Population Exposed to Adverse Effects Due to Industrial Activities. C. Vollono, R. Latella, L. Lauria, A. Bastone; Istituto Superiore di Sanita, Italy.

11:30 9.04  
Arsenic and Plague: An Analysis of Communicating Risks in India. A. S. Susarla; Clark University

10:30 am - Noon

Room: Papago

Distributional Analysis

Chair: S. Youngren

10:30 10.01  
Choosing Distributional Forms for Use in Monte Carlo Exposure Assessments. M. A. Youngren, S. H. Youngren; MITRE Corporation; Novigen Sciences, Inc.

10:50 10.02  
The Application of Microexposure Event Modeling to the Evaluation of Water-Related Exposures. J. A. Rotbrock, P. S. Price, R. E. Keenan, E. S. Ebert, C. F. Chaisson, W. R. Muir; McLaren/Hart, Inc.; TAS-Environ; Hampshire Research Institute

11:10 10.03  
Dietary Exposure to Pesticides: Comparison of Empirical and Probability Distribution Estimates. D. Baugher; EXP Corporation

11:30 10.04  
A Bayesian Synthesis Approach to Assessing Exposure to PCBs in New Bedford Harbor. S. C. Bates (Student Awardee), A. C. Cullen, A. E. Raftery; University of Washington

1:30 - 3:00 pm

Room: Sonora

Symposium: Use of Risk Information in Business Decisions

Chair: L. Rudenko

1:30 11.01  
A Reasonable Person Standard for the 21st Century: The Legal Connection Between Risk and Action in a Business Decision Context. N. S. Bryson; Crowell & Moring

1:50 11.02  
Incorporating Risk Concepts Into Performance-Based Building and Fire Regulation Development: Phase I - Conceptual Approach. B. J. Meacham; Society of Fire Protection Engineers

2:10 11.03  
The Nature of Business Risk. K. R. MacCrimmon, M. L. Martens; University of British Columbia, Canada

2:30 11.04  
TBD. L. Rudenko; Environ

1:30 - 3:00 pm

Room: Kachina

Risk Analysis in the Courts: - Poster Platform

Co-Chairs: J. Applegate and W. E. Wagner

The Risk Science and Law Specialty Group's annual Poster Session will showcase thirty-five posters that summarize over 100 court cases involving issues related to risk assessment. During the session, the authors will be available to discuss specific cases or categories of cases with other SRA members. A reduced copy of the entire set of posters will be available upon request.

1:30 - 3:00 pm

Room: Saguario 1

Effects of Risk Communication

Chair: J. K. Hammitt

1:30 13.01  
Evaluating Risk Communication: In Search of a Gold Standard. J. K. Hammitt; Harvard School of Public Health

1:50 13.02  
Risk Perceptions, Environmental Values, and Willingness to Address Climate Change. R. E. O'Connor, R. J. Bord, A. Fisher; Pennsylvania State University

2:10 13.03  
A Conceptual Framework for Assessing the Effect of Risk Communication on Consumer Purchasing Decisions. R. L. Beekman, L. Blake-Hedges; US EPA, Washington, DC

2:30 13.04  
Physician Communication with Patients Regarding Risks of Side Effects in Cancer Clinical Trials. T. L. Albrecht, D. Eaton, L. Rivera, R. Strongbow, C. Blanchard, J. Ruckdeschel; University of South Florida; Albany Medical College; H. Lee Moffitt Cancer and Research Institute.

1:30 - 3:00 pm

Room: Saguario 2

Symposium: Pro-Active Interagency Partnership to Address Perchlorate Contamination - Part 2

Co-Chairs: A. Jarabek and D. Rogers

1:30 14.01  
Targeted Toxicity Testing Program to Revise Provisional RfD for Perchlorate. A. M. Jarabek, D. R. Mattie; US EPA, RTP, NC; US Air Force

1:50 14.02  
Pharmacokinetic Modeling Considerations for Examining Perchlorate Induced Inhibition of Iodide Uptake in the Thyroid Gland. J. W. Fisher, K. Yu; US Air Force

2:10 14.03  
Independent External Peer Review of Perchlorate RfD and Toxicity Studies. P. C. Grevatt; US EPA, Washington, DC

2:30 14.04  
Transport, Transformation, and Ecological Risk Assessment of Perchlorate. G. C. Long, R. C. Porter, M. D. Sprenger, C. Callahan; US Air Force; US EPA, Edison, NJ and San Francisco, CA

1:30 - 3:00 pm

Room: Palo Verde 1

Engineering Systems - Risk Issues

Chair: S. H. Levinson

1:30 15.01  
Challenges in the Management of Faster-Better-Cheaper Space Missions and Analytical Tools for Decision Support. E. Palé-Cornell, R. Dillon; Stanford University

1:50 15.02  
The Use of Unsatisfactory Condition Reports in the Reliability Data Development for the Space Shuttle Main Engine. J. Swider, Z. Huang; The Boeing Company

2:10 15.03  
Potential Health Risks from Urban Infrastructure Activities. R. Zimmerman; New York University

2:30 15.04  
An Approach for Quantifying the Risk of Injury from Toys. C. Doran, T. Xu; ITS Risk Analysis & Management

1:30 - 3:00 pm

Room: Palo Verde 2

Symposium: A Risk Assessment of Salmonella Enteritidis in Eggs and Egg Products - Part 1

Chair: A. T. Hogue

1:30 16.01  
Overview of the Risk Assessment for Salmonella Enteritidis in Eggs and Egg Products. R. Morales; University of Maryland

1:50 16.02  
A Model of Salmonella Enteritidis in Egg Products Processing. A. Hogue; USDA, Washington, DC

2:10 16.03  
Modeling Salmonella Enteritidis Growth in Shell Eggs. R. Whiting; US FDA

2:30 16.04  
Modeling Dose-Response for Illness from Salmonella Enteritidis in Eggs. A. Baker; USDA, Washington, DC

1:30 - 3:20 pm

Room: Mohave

Setting Priorities for Regulatory Decision Making

Chair: J. Solyst

1:30 17.01  
Framework for a Regulatory Dose Response Relative Risk Model. K. E. von Stackelberg (Student Awardee), A. Q. Eschenroeder; Harvard School of Public Health

1:50 17.02  
The Cost-Effectiveness of Lifesaving Interventions in Japan. A. Kishimoto, M. Gamo, T. Oka, J. Nakanishi; National Institute for Resources and Environment, Japan; University Fukui, Japan; Yokohama National University, Japan; CREST

2:10 17.03  
Setting Priorities for Urban Environmental Health: An Evaluation of Risk Ranking and Scoring Methods. N. M. Shalauta, T. A. Burke, P. Hynes, D. Ozonoff, R. Clapp; Johns Hopkins University School of Public Health; Boston University School of Public Health

2:30 17.04  
Application of Comparative Risk to Strategic Planning and Budgeting at the US EPA. J. M. Greenblatt, M. S. Brody; US Environmental Protection Agency

2:50 17.05  
What Determines Priorities During Liquidation of Extreme Situations. S. G. Kharchenko, A. A. Prokhozhev, V. A. Vladimirov, N. A. Mukhutov; Russian Academy of State Service, Russia.

1:30 - 3:00 pm

Room: Pueblo

Symposium: Are Traditional Uncertainty Factors Large Enough? Is the Product of Uncertainty Factors Too Large?

Chair: R. L. Kodell

1:30 18.01  
Distribution of Animal-to-Human Uncertainty Factors. M. Dourson; Toxicology Excellence for Risk Assessment

1:50 18.02  
Distributions of Individual Susceptibility Among Humans for Toxic Effects—For What Fraction of Which Kinds of Chemicals and Effects Does the Traditional 10-Fold Factor Provide How Much Protection? D. B. Hattis; Clark University

2:10 18.03  
Confidence Level for the Product of Uncertainty Factors. D. W. Gaylor, R. L. Kodell, J. J. Chen; US FDA, Jefferson, AR

2:30 18.04  
Interpreting Adequacy of Uncertainty Factors in the Context of ADI/RfD Use. J. D. Wilson; Resources for the Future

1:30 - 3:00 pm

Room: Aztec

Risk Communications and Environmental Decision Making

Chair: S. Santos

1:30 19.01  
Stakeholder Involvement Processes: Evaluating Restoration Advisory Boards. S. L. Santos, C. Chess, L. Geckle; Focus Group; Rutgers University; US Army Center for Health Promotion and Preventative Medicine.

1:50 19.02  
The Public Acceptance of Controversial Technologies (PACT) Model: Dialogs and Decision Making. A. K. Wolfe, D. J. Bjornstad, M. Russell; Oak Ridge National Laboratory; University of Tennessee

2:10 19.03  
Communicating Worst-Case Scenarios: Challenges and Research-Supported Options. K. E. Rowan; Purdue University

2:30 19.04  
Basic Science and Risk Communication: Of the People, By the People, For the People. T. S. Peterson, J. P. Amaya, G. R. Bilyard, A. K. Harding, C. Word; Battelle; Pacific Northwest National Laboratory; Oregon State University; Washington State University

1:30 - 3:00 pm

Room: Papago

Predicting Target Tissue Dose

Co-Chairs: P. M. Schlosser and S. E. Hrudey

1:30 20.01  
Formaldehyde Risk Assessment Using a Distributed Transport Model to Predict Dose in the Nasal Lining. P. M. Schlosser, D. B. Janszen, J. S. Kimbell, P. Lilly; Chemical Industry Institute of Toxicology

1:50 20.02  
Physiologically Based Pharmacokinetic (PBPK) Modeling of Ethylene Glycol Ethers and Acetates. S. M. Hays, T. R. Tyler, C. R. Kirman, R. Corley, M. L. Gargas; ChemRisk; Union Carbide Corporation; Battelle Northwest

2:10 20.03  
New Assay for DNA Damage - Potential Breakthrough for Cancer Risk Assessment. X. C. Le, S. E. Hrudey; University of Alberta, Canada

2:30 20.04  
Theory of Health Risk I. Calculations of Cellular Risk from Biochemical Principles. J. L. R. Chandler; George Mason University

3:30 - 5:00 pm

Room: Sonora

Risk and the Armed Forces

Chair: G. B. Briggs

3:30 21.01  
The Use of Risk Assessment in Navy Deployment Toxicology. G. B. Briggs, W. Alexander, K. R. Still; US Air Force

3:50 21.02  
Technology, Bureaucracy, and Risk in the Marine Workplace. J. M. Keridra; Rutgers University

4:10 21.03  
U.S. Coast Guard R&D Projects in Support of Risk-Based Decision Making. K. A. Hansen; US Coast Guard R&D Center

3:30 - 5:20 pm

Room: Kachina

Symposium: Similarities and Differences in Chemical Radiation Risk Management

Chair: N. Tran

3:30 22.01  
Presentation Title TBD. N. Tran; Johns Hopkins University

3:50 22.02  
Presentation Title TBD. D. Barnes; US EPA, Washington, DC

4:10 22.03  
Presentation Title TBD. B. Harper; Yakima ER/WM Program

4:30 22.04  
Presentation Title TBD. P. Locke; Environmental Law Institute

4:50 22.05  
Presentation Title TBD. D. O'Connor

3:30 - 5:20 pm

Room: Saguaro 1

Media Coverage of Risk

Chair: R. J. Griffin

3:30 23.01  
Audience Seeking and Processing of Information About Risks to the Great Lakes Ecosystem. R. J. Griffin, S. Dunwoody, K. Neuwirth; Marquette University; University of Wisconsin Madison; University of Cincinnati

3:50 23.02  
Danger! Toxic Reporting: A Case Study of the Benzene Barge Spill on the Mighty Mississippi. S. F. Dube; University of South Carolina

4:10 23.03  
Newspaper Coverage of Risk at Two Major US Nuclear Weapons Sites: A Content Analysis. L. M. Waisbwell, K. Lowrie; CRESF

4:30 23.04  
The Media, The Public and EPA's Draft Dioxin Report. S. M. Friedman, B. Egolf; Lehigh University

4:50 23.05  
Should Reporters Use Risk as a Determinant of Environmental Coverage? D. B. Sachsman; University of Tennessee

3:30 - 5:00 pm

Room: Saguaro 2

Symposium: Pro-Active Interagency Partnership to Address Perchlorate Contamination - Part 3

Co-Chairs: A. Jarabek and D. Rogers

3:30 24.01  
Status of Inter-Laboratory Analytical Methods Validation Study. D. T. Tsui; US Air Force

3:50 24.02  
Treatment Technologies for Perchlorate Reduction. E. T. Urhansky; US EPA, Cincinnati, OH

4:10 24.03  
Perchlorate: Policy and Regulatory Considerations Under the Safe Drinking Water Act Amendments of 1996. M. T. Ostinski; US EPA, Washington, DC

4:30 Panel Discussion

3:30 - 5:20 pm

Room: Palo Verde 1

Looking to the Future

Chair: M. McElwaine

3:30 25.01  
An Overview of Applied Environmental Futures Research. S. C. Keach; US EPA, Washington, DC

3:50 25.02  
Why the Society of Risk Analysis Should Debate Policies for Regulation of Very Long Term Risk. D. Okrent; University of California, Los Angeles

4:10 25.03  
Assessing Preferences for Environmental Decisions with Long-Term Consequences. T. Eppel, J. Guyse, L. R. Keller; Decision Insights, Inc.; University of California, Irvine

4:30 25.04  
Adaptability of Environmental and Occupational Protections Systems to Major Societal Change; Lessons from the Polish Experience. H. S. Brown, D. Angel, P. Derr; Clark University

4:50 25.05  
Managing Long-Term Risk Through Stewardship: A Stakeholder Approach. D. J. Sarno; International Association for Public Participation



3:30 - 5:00 pm

Room: Palo Verde 2

Symposium: A Risk Assessment of Salmonella Enteritidis in Eggs and Egg Products - Part 2

Chair: A. T. Hogue

3:30 26.01  
Modeling Salmonella Enteritidis in Egg Containing Foods. W. Schlosser; Ft. Collins, CO

3:50 26.02  
Assessing the Production of SE-Positive Eggs. E. D. Ebel, W. D. Schlosser; Ft. Collins, CO

4:10 26.03  
Formulation of a Dose-Response Equation for Human Illness from Salmonella Enteritidis. R. McDowell; USDA, Riverdale, MD

3:30 - 5:20 pm

Room: Mohave

New Approaches to Decision Making

Chair: K. Kunzer

3:30 27.01  
Impacts of Regulatory Reform on Analytic Practices. D. G. Holdsworth; Trent University, Canada

3:50 27.02  
Merging Technical and Institutional Issues in Environmental Decision Making. L. L. Wells, W. E. Kastenberg; University of California, Berkeley

4:10 27.03  
Environmental Risk Management as a Regulatory Tool: The New Zealand Experience. J. D. Gough, S. J. Thornton; ERMA New Zealand; Lincoln University, New Zealand

4:30 27.04  
Uncertainty, Variability, Time Evolution and Discounting in Managing Groundwater-Driven Health Risk. R. M. Maxwell, M. D. Lowenthal; Lawrence Livermore National Laboratory; University of California, Berkeley

4:50 27.05  
New Risk Analysis Requirements Through the World Trade Organization. V. R. Walker; Hofstra University School of Law

3:30 - 5:00 pm

Room: Pueblo

Symposium: Probabilistic Methods in Aggregate and Cumulative Risk Assessments

Chair: L. M. Barraj

3:30 28.01  
Aggregate Risk Assessment of Pesticides at the U.S. EPA's Office of Pesticide Programs. D. J. Miller; US EPA, Washington, DC

3:50 28.02  
Using a Calendar Method to Assess Exposure to Pesticides Applied in the Home at Different Times. S. H. Youngren, C. Walls, L. M. Barraj, B. M. Polakoff; Novigen Sciences, Inc.

4:10 28.03  
Probabilistic Characterization of RfD: Empirical Data to Develop Uncertainty Factor Distributions. S. J. S. Baird; Newton, MA

4:30 28.04  
Using a Probabilistic RfD to Assess Risk from Cumulative Dietary Exposure to Multiple Pesticides. E. A. Julien; Indiana University School of Medicine

3:30 - 5:00 pm

Room: Aztec

Formulating Effective Risk Messages

Chair: C. Scherer

3:30 29.01  
Formulating Messages Which Promote Informed Decision-Making. C. W. Scherer; Cornell University

3:50 29.02  
Using the Interpretive Continuum as a Targeting Tool. R. N. Rimal; Texas A&M University

4:10 29.03  
Public Preferences Toward Environmental Risks: The Case of THMS. R. T. Carson, R. C. Mitchell; University of California, San Diego; Clark University

4:30 29.04  
Developing Salient Food-Risk Communication for Different Hazards. L. J. Frewer, S. Miles; The Institute of Food Research, United Kingdom

3:30 - 5:20 pm

Room: Papago

Symposium: Aggregate Exposure Assessment for Pesticides: Implementing FQPA

Chair: S. S. Olin

3:30 30.01  
A Perspective on Quantitative Methods for Aggregate Risk Assessments Under the Food Quality Protection Act. R. L. Sielken, Jr.; Sielken, Inc.

3:50 30.02  
The Food Quality Protection Act: An Industry Perspective of Aggregate Exposure Assessment. C. S. Barrow, B. Shurdut, C. Breckenridge, R. Layton, R. Jones, D. Robinson; Dow AgroSciences; Novartis; DuPont; Rhone-Poulenc; International Life Sciences Institute.

4:10 30.03  
Aggregate Exposure and Beyond: The Methodological and Informational Challenges We Face Under the FQPA. K. M. Thompson; Harvard Center for Risk Analysis

4:30 30.04  
Implementation of Aggregate Exposure Assessments by EPA-An Update and Regulatory Perspective. E. A. Doyle; US EPA, Washington, DC

4:50 30.05  
Methods for Risk Assessment of Pesticides in the Diet. B. E. Mileson, S. S. Olin, J. A. Foran, E. Julien, L. Barraj, B. Petersen; ILSI Risk Science Institute; Novigen Sciences, Inc.

8:30 - 10:00 am

Room: Sonora

Stakeholders in Risk Management - Part 1

Chair: R. Belzer

8:30 31.01  
Environmental Risk Management: The Road Less Traveled. G. R. Biddinger, R. P. Brown, J. Durda, W. R. Gala, M. C. Harrass, C. A. Pittinger, R. G. Stahl; American Industrial Health Council

8:50 31.02  
Community Representation and Risk Management at BRAC Facilities. L. G. Catm, J. N. Skibinski; Science Applications International Corporation

9:10 31.03  
Risk Assessment, Communication and Management: An Integrated Approach to Facility Risk Management Planning Under Section 112(R) of the Clean Air Act Amendments of 1990. B. B. Witherell, D. Goldstein, K. Henry, P. Nogar; Environmental Resources Management

9:30 31.04  
Risk Management for Mediation Process in Case of Waste Management Dispute. K. Sato; Mediation Committee for Environment Affairs, Japan.

8:30 - 10:00 am

Room: Kachina

Risk Perception - Poster Platform

Chair: K. Swain

32.01 Regulating Coastal Bathing Water Health Risks in a Democratic Society. I. H. Langford, R. J. Day, S. Georgiou, I. J. Bateman, R. K. Turner; University of East Anglia, United Kingdom

32.02 Risk Communication: The Evaluation-Mediation Hypothesis. T. Reimer; University of Potsdam, Germany

32.03 Developmental Determinants of Risk-Related Cognition Among School-Aged Children. R. A. de Blaquiere, B. Williams; Environment, Behavior, and Risk Research.

32.04 Nuclear Risk Perception and Policy Implications. Y. J. Cha; Kangnam University, Korea

32.05 Risk Perception, Risk Communication, and Environmental Justice in the Netherlands? A. C. Halfacre; University of Charleston

32.06 Barriers and Inroads to AIDS Dialogue in African American Religious Contexts. K. A. Swain; Texas A&M University

32.07 Determinants of Public Involvement Among Residents Living Near the Savannah River Site. S. Brown, B. Williams; Consortium for Risk Evaluation and Stakeholder Participation.

32.08 Contribution of Interpersonal Communication to the Effects of a Campaign on Working Safely. G. A. van der Rij; University of Nijmegen, The Netherlands

8:30 - 10:00 am

Room: Saguaro 1

Determinants of Risk Perception

Chair: M. L. Finucane

8:30 33.01  
The Inverse Relationship Between Perceived Risk and Perceived Benefit Under Time Pressure. M. L. Finucane, P. Slovic; Decision Research

8:50 33.02  
Public Perception of Projects Involving Human Health, Ecological, and Quality-of-Life Impacts. P. Fischbeck, J. N. Follin; Carnegie Mellon University

9:10 33.03  
Environmental Impact Statements—Risk Perception, Decision Making, and Environmental Risks. J. N. Follin; Carnegie Mellon University

9:30 33.04  
Opening Pandora's Box: Risk Prototypes Across Perceived Time. L. K. Dobbs; The Ohio State University

8:30 - 10:00 am

Room: Saguaro 2

Symposium: Application of the Framework for Risk Analysis in Multimedia Environmental Systems (FRAMES) - Part 1

Chair: J. W. Buck

8:30 34.01  
Concepts Associated with Framework for Risk Analysis in Multimedia Environmental Systems. G. Whelan, K. J. Castleton, J. W. Buck, B. L. Hoopes, M. A. Pelton; Pacific Northwest National Laboratory

8:50 34.02  
Estimating Health Impacts from Multiple Contaminant Sources at the US DOE Pantex Plant. M. E. Kelley, F. Snyder, D. Barton, J. W. Buck, D. L. Streng; Battelle; Pacific Northwest National Laboratory

9:10 34.03  
A Risk-Based Approach for a National Assessment. G. Whelan, G. F. Layiak, K. J. Castleton, B. L. Hoopes, M. A. Pelton; Pacific Northwest National Laboratory, US EPA, Athens, GA

8:30 - 10:00 am

Room: Palo Verde 1

Modeling Exposure Over Global Ranges

Chair: M. G. Morgan

8:30 35.01  
Preliminary Site Characterization of the Rudnaya Pristan-Dalnorsk Mining District, Russian Far East. S. M. Spalinger (Student Awardee), M. C. von Braun, I. von Lindern, N. Kristoforova, A. Kachur; University of Idaho; TerraGraphics Environmental Engineering, Inc; Far Eastern State University, Russia; Pacific Geographical Institute, Russia

8:50 35.02  
Overall Human Exposure Based on Spatial Range and Persistence. D. H. Bennett (Student Awardee), W. E. Kastenber, T. E. McKone; University of California, Berkeley

9:10 35.03  
Use of Multi-Media Models for Defining Persistence and Long-Range Transport of Chemicals. C. E. Cowan, T. F. Parkerton, D. van de Meent; The Procter & Gamble Company; Exxon Biomedical Sciences, Inc; RIVM, The Netherlands

9:30 35.04  
Impacts of Climate Change on Forest Ecosystems: An Expert Elicitation of Terrestrial Ecologists. M. G. Morgan, L. F. Pitelka; Carnegie Mellon University; University of Maryland, Frostburg

8:30 - 10:00 am

Room: Palo Verde 2

Symposium: Uncertainty Analysis in QRA: Strengths & Weaknesses

Chair: D. Wartenberg

8:30 36.01  
If Uncertainty Analysis is Good, Are All Point Estimates Bad? OSHA's Methylene Chloride Regulation. *A. M. Finkel; US Occupational Safety and Health Administration*

8:50 36.02  
Implementing PRA at EPA: The View of a Regional Risk Assessor. *T. W. Simon; US EPA, Atlanta, GA*

9:10 36.03  
Uncertainty Analysis: Does it Deliver What it Promises? *D. Wartenberg, B. Binkowitz, G. Harris; EOHHSI UMDNJ*

8:30 - 10:00 am

Room: Mohave

Risk Science and Law: Toxic Injury Lawsuits—Part 1

Chair: W. Roth-Nelson

Session 37  
Recent Supreme Court decisions have given trial judges greater authority to screen expert testimony. A panel, including a judge, lawyers, experts and commentators, will discuss whether and how judges should employ rigorous screening criteria in evaluating expert testimony.

8:30 - 10:00 am

Room: Pueblo

Symposium: Good Risk Assessment Practices: Making it Work

Chair: S. A. Foster

8:30 38.01  
Principles of Good Risk Assessment Practice. *S. A. Foster; P. C. Chrostowski, G. Charnley; The Weinberg Group Inc.*

8:50 38.02  
Achieving Good Risk Assessment Practices in the EPA Hazardous Waste Program. *D. A. Canter; US EPA, Washington, DC*

9:10 38.03  
Congressional Interest in Risk Assessment Legislation. *P. R. Noe; Senate Governmental Affairs Committee*

9:30 38.04  
ASTM and its Role in Developing Good Risk Assessment Practices. *T. J. Schruben; United Capitol Environmental*

8:30 - 10:00 am

Room: Aztec

Symposium: Assessing and Managing Risks Under the CAA's Residual Risk Program - Part 1

Chair: K. A. Rimer

8:30 39.01  
EPA's Residual Risk Report to Congress: Overview and Status. *D. A. Pagano, K. A. Rimer; US EPA, RTP, NC*

8:50 39.02  
A Risk Management Framework for Decision-Making Under the Residual Risk Program. *R. G. Heles, K. A. Rimer, D. A. Amaral; US EPA, RTP, NC; EC/R Inc.*

9:10 39.03  
Assessing Post-MACT Risks for Air Toxics. *M. G. Dusetzina, K. A. Rimer, D. A. Amaral; US EPA, RTP, NC; EC/R Inc.*

8:30 - 10:20 am

Room: Papago

Symposium: Implementation of the Food Quality Protection Act of 1996: Development and Validation of Advanced Methods for Assessing Potential Residential Exposures - Part 1

Co-Chairs: J. H. Driver and T. Osimitz

8:30 40.01  
Conceptual Approach to Residential Exposure Assessment Under FQPA. *T. G. Osimitz; S. C. Johnson & Son, Inc.*

8:50 40.02  
Overview of Ongoing Industry-Sponsored Residential Exposure Monitoring Research Programs. *L. A. Fell; S. C. Johnson & Son, Inc.*

9:10 40.03  
Recent and Ongoing USEPA Research Programs on Residential Exposures. *C. Dary, C. Saint; US EPA, Las Vegas and Washington, DC*

9:30 40.04  
Update on USEPA Guidelines/SOPS for Residential Exposure Assessment. *J. Evans, J. Dawson; US EPA, Washington, DC*

9:50 40.05  
Multi-Pathway, Multi-Route Residential Exposure Modeling: An Improved Approach for Dermal Exposure Assessment. *M. D. Pandian, J. H. Driver, G. K. Whitmyre; risksciences.com*

10:30 am - Noon

Room: Sonora

Stakeholders in Risk Management - Part 2

Chair: D. A. Canter

10:30 41.01  
Model for Stakeholder Contribution to the Peer Review Process of Controversial Technical Issues. D. A. Canter, W. Wood, P. Grevatt, D. E. Patton; US EPA, Washington, DC

10:50 41.02  
When Siting Principles Conflict. J. Baxter, J. Eyles, S. Elliott; University of Calgary, Canada; McMaster University, Canada.

11:10 41.03  
Stewardship Assessments for Site Closure(1): Moving Beyond Risk Based Decision Making. B. L. Harper, S. G. Harris; Yakama ER/WM Program; Confederated Tribes of the Umatilla Indian Reservation.

11:30 41.04  
Stewardship Assessments for Site Closure (2): Landscape-Level Risk Management. S. G. Harris, B. L. Harper; Confederated Tribes of the Umatilla Indian Reservation; Yakama Nation ER/WM

10:30 am - Noon

Room: Kachina

Mechanism - Motivated Modeling - Poster Platform

Chair: R. W. Setzer

42.01 Relative Roles of Cytolethality and Mutagenicity in the Carcinogenicity of Formaldehyde. R. B. Conolly, R. J. Preston; Chemical Industry Institute of Toxicology

42.02 PBTK Model of Methylmercury Toxicity in the Fetal Rats. T. A. Lewandowski, S. M. Bartell, C. H. Pierce, R. A. Ponce, E. M. Faustman; University of Washington

42.03 Modeling Links Between Administered Dose of 5-Fluorouracil and Fetal Nucleotide Pool Perturbation. R. W. Setzer; US EPA, RTP, NC

42.04 Quantitative Evaluation of Alternative Mechanisms of MEHP Blood and Testes Disposition in Rats. D. A. Keys, D. G. Wallace, R. B. Conolly; North Carolina State University; Chemical Industry Institute of Toxicology

42.05 Simulation Studies on the Effect of CYP2E1 Induction on Trichloroethylene Metabolism in Humans. G. M. Pastino, J. Fisher; US EPA, Washington, DC; US Air Force

42.06 Structure-Activity Relationships for Nasal Toxicity Based on a Small Dataset of Gaseous Aromatics: Mediation of Activity by Electronic Properties and Molecular Weight. A. Richard, P. Boone, M. Greenburg; US EPA, RTP, NC

10:30 am - Noon

Room: Saguaro 1

Effective Methods of Risk Communication

Chair: J. Z. Temple

10:30 43.01  
Preparing Technical Experts for Public Outreach. J. Z. Temple, S. S. Bath; Medical University of South Carolina

10:50 43.02  
Risk Comparisons: What Does the Public Want? B. B. Johnson; New Jersey Department of Environmental Protection

11:10 43.03  
A Role for the Mental Models Approach in Strategic Outreach. S. L. Thorne, G. E. Buille; Decision Partners, Canada and Pittsburgh, PA

11:30 43.04  
Speaking About Risk: The Impacts of Public Meetings on Participants' Risk Perceptions. K. A. McComas; Cornell University

10:30 am - Noon

Room: Saguaro 2

Symposium: Application of the Framework for Risk Analysis in Multimedia Environmental Systems (FRAMES) - Part 2

Chair: J. W. Buck

10:30 44.01  
User Features of Framework for FRAMES. G. M. Kelton, G. Whelan, B. L. Hoopes, R. Y. Taira; Pacific Northwest National Laboratory

10:50 44.02  
The GENII Version 2 Environmental Radiation Dosimetry Software System in FRAMES. B. A. Napier, D. L. Strenge, J. V. Ramsdell, Jr.; Pacific Northwest National Laboratory

11:10 44.03  
New Capabilities and Applications on MEPAS 4.0 in FRAMES. J. W. Buck, K. J. Castleton, J. P. McDonald, M. A. Pelton; Pacific Northwest National Laboratory

10:30 am - Noon

Room: Palo Verde 1

Symposium: Rats! (Rodent Bioassays and Risk Assessment)

Co-Chairs: G. Gray and I. Linkov

10:30 45.01  
Anticarcinogenicity and Interpretation of Long-Term Rodent Bioassays. G. M. Gray, I. Linkov, R. Wilson; Harvard Center for Risk Analysis; Harvard University

10:50 45.02  
Liver Adenomas and Carcinomas: Tumor Classification and Implication for Bioassay Interpretation. I. Linkov, A. Shagiabmetov, R. Wilson, G. M. Gray; Harvard University; Harvard Center for Risk Analysis

11:10 45.03  
Anticarcinogenicity in Rodent Bioassays: Relation to Observed Human Anticarcinogenicity. F. Pompei, R. Wilson, I. Linkov, L. R. Rhomberg, G. M. Gray; Exergen Corporation; Harvard University; Harvard Center for Risk Analysis

11:30 45.04  
Absolute vs. Relative Risk as a Basis for Cross-Species Prediction of Carcinogen Potency. L. R. Rhomberg, I. Linkov, A. Shagiabmetov, R. Wilson, G. M. Gray; Harvard Center for Risk Analysis; Harvard University

10:30 am - 12:20 pm

Room: Palo Verde 2

Integrating Risk Assessment and Benefit/Cost Analysis

Chair: R. Belzer

10:30 46.01  
Integrating Dose-Response and Economic Impact Assessments. *C. Nardinelli; US FDA, Washington, DC*

10:50 46.02  
An Index of Harm for Exposure to a Combination of Radiation and Chemical Pollutants. *S. B. Curtis, S. M. Bartell, E. M. Faustman, W. C. Griffith; Fred Hutchinson Cancer Research Center; University of Washington CRES*

11:10 46.03  
Revealed Preferences and Environmental Risks: Lessons Learned from Two Policy Debates. *R. A. Cantor; Law & Economics Consulting Group*

11:30 46.04  
Estimating the Costs of Pathogen Controls in the FDA Juice HACCP Regulations: A Monte Carlo Analysis. *C. R. Ford McLaughlin, D. J. Zorn; US FDA, Washington, DC*

11:50 46.05  
A Municipal Model of the Social Cost-Effectiveness of Mandating Residential Fire Sprinklers. *K. A. Notarianni, L. Lave, P. Fischbeck; National Institute of Standards and Technology; Carnegie Mellon University*

10:30 am - Noon

Room: Mohave

Risk Science and Law: Toxic Injury Lawsuits - Part 2

Chair: W. Roth-Nelson

10:30 47.01  
The Relationship Between Relative Risk and "More Likely Than Not" Causation in Toxic Tort Cases. *R. S. Carruth, B. D. Goldstein; UMDNJ*

10:50 47.02  
Medical Testimony in Toxic Injury Cases: Bridging the Gap Between Science and Law. *S. R. Poultter; University of Utah*

11:10 47.03  
Five Dimensions of Scientific Testimony in Court. *K. M. Verdeal; Toxicology Consulting, Inc.*

11:30 47.04  
Validating Airborne Chemical Exposure Assessment for Juries: Two Case Studies Involving Chlorinated Hydrocarbons in Groundwater. *B. D. Kerger, C. M. Teaf; Health Science Resource Integration; Hazardous Substance Waste Management & Research*

10:30 am - Noon

Room: Pueblo

Microbial Risk

Chair: M. McElvaine

10:30 48.01  
A Quantitative Risk Assessment Model for Predicting the Level of Infection with Enzootic Bovine Leukosis (EBL) Within the GB Cattle Herd. *M. Wooldridge, L. A. Kelly; Veterinary Laboratories Agency, UK*

10:50 48.02  
Characterization of the Relationship Between Salmonella Levels in Shell Eggs and Handling Scenarios. *H. K. Latimer (Student Awardee), L. A. Jaykus, R. A. Morales, P. Cowen, D. Crawford-Brown; University of North Carolina; North Carolina State University; University of Maryland*

11:10 48.03  
Generating a Family of Human Non-Typhoid Salmonellosis Dose-Response Curves Informed by Animal Data. *M. E. Coleman, H. M. Marks; US Department of Agriculture, Washington, DC*

11:30 48.04  
Applications of Stochastic Processes to Microbial Risk Assessment. *H. M. Marks, M. E. Coleman; US Department of Agriculture, Washington, DC*

10:30 am - Noon

Room: Aztec

Symposium: Assessing and Managing Risks Under the CAA's Residual Risk Program - Part 2

Chair: D. A. Pagano

10:30 49.01  
Residual Risk Data Quality Issues. *D. A. Amaral, M. G. Dusetzina, S. A. Walata; EC/R Inc.; US EPA, RTP, NC*

10:50 49.02  
A Residual Risk Assessment Methodology Case Study. *D. A. Amaral, M. G. Dusetzina, B. S. Perkovich; EC/R Inc.; US EPA, RTP, NC*

11:10 49.03  
Addressing Variability and Uncertainty in Residual Risk Analysis. *D. A. Amaral, M. G. Dusetzina, B. S. Perkovich; EC/R Inc.; US EPA, RTP, NC*

11:30 49.04  
Science Policy Considerations in Developing a Risk-Based Regulatory Program. *K. A. Rimer, D. A. Pagano, R. G. Helas; US EPA, RTP, NC*

10:30 am - 12:20 pm

Room: Papago

Symposium: Implementation of the Food Quality Protection Act of 1996: Development and Validation of Advanced Methods for Assessing Potential Residential Exposures - Part 2

Co-Chairs: J. H. Driver and T. Osimitz

10:30 50.01  
Indoor Simulated Residential Chamber (SRC) Approaches to Exposure Monitoring, and Results of Illustrative Studies. *R. E. Rogers, G. K. Whitmyre, J. H. Driver, M. D. Pandian; TOXCON Health Sciences Research Centre; risksciences, Canada; risksciences.com, LLC, Virginia*

10:50 50.02  
Outdoor Residential Exposure Measurements and Monitoring Studies. *D. Eberhart; Bayer Corporation*

11:10 50.03  
Time-Activity Data Sources and Utility. *J. R. DeProspo, M. D. Pandian; AgrEvo USA Company; risksciences.com, Nevada*

11:30 50.04  
Biomonitoring Studies and Surveys. *B. A. Shurdt, J. H. Ross; Dow AgroSciences; California Environmental Protection Agency*

11:50 50.05  
Integration of Residential Exposure with Dietary and Drinking Water Exposures: Aggregate and Cumulative Exposure Assessment and Risk Analysis Under FQPA. *M. E. Ginevan, R. L. Stelken; risksciences.com, LLC, Virginia; Stelken, Inc.*

1:30 - 3:00 pm

Room: Sonora

Approaches to Risk Assessment & Risk Management - Part 1

Co-Chairs: S. Brown and D. Paustenbach

1:30 51.01  
Significant Up-Coming Changes in the Application and Practice of Risk Assessment. D. J. Paustenbach, D. G. Dodge; McLaren/Hart, Inc.

1:50 51.02  
Practical Problems with the Precautionary Principle. S. L. Brown; R2C2

2:10 51.03  
OPPT's Risk Screening Environmental Indicators Model. N. Bouwes, S. Hassur, S. Keane, B. Firlie; US EPA, Washington, DC; ABT Associates

2:30 51.04  
An Approach for Evaluating Emerging Issues and Environmental Futures. K. M. Thompson, J. K. Hammitt; Harvard Center for Risk Analysis

1:30 - 3:00 pm

Room: Kachina

Symposium: Trust - Part I

Chair: R. Löfstedt

1:30 52.01  
Trust Assessment. J. Flynn; Decision Research

1:50 52.02  
Trust, the Economy, and Environmental Risk: An Exploratory Study of Risk Perceptions in Bourgas, Bulgaria. A. Bostrom, K. Paskaleva, R. Barke; Georgia Institute of Technology; Georgia Tech Research Institute.

2:10 52.03  
Risk, Trust, and Democratic Theory. R. E. Kasperon, J. X. Kasperon; Clark University

1:30 - 3:00 pm

Room: Saguario 1

Influences of Risk Perceptions

Chair: C. G. Jardine

1:30 53.01  
Drinking Water Odours and Health Risk Perception. C. G. Jardine, S. E. Hrudey, N. Gibson; University of Alberta, Canada

1:50 53.02  
How the Public Perceives, Processes and Interprets Cancer Risk Information. A. E. Lubenow, E. Eisner, D. Bloom, M. Fancher, B. Spicher, F. Donodeo; National Cancer Institute

2:10 53.03  
An Epidemic of Epidemiology? Cancer Clusters Reported to State Health Departments. C. W. Trumbo, J. Eddy; University of Wisconsin; Cornell University

2:30 53.04  
Mass Communication and Public Understanding of Environmental Risks: The Case of Global Warming. F. J. Clark, K. R. Stamm, P. Reynolds-Eblascas; University of Washington

1:30 - 3:00 pm

Room: Saguario 2

Attributing Risk: Population Risk

Co-Chairs: R. L. Kodell and M. Ginevan

1:30 54.01  
Risk Estimation for Cohort of Children Exposed to Radiation in Consequence of the Chernobyl Accident. E. I. Bomko, A. E. Romanenko, A. A. Bomko; Scientific Centre for Radiation Medicine, Ukraine

1:50 54.02  
New Perspectives on the Relationship Between Formaldehyde and Lung Cancer. J. E. Korte, I. Hertz-Picciotto, M. R. Schulz, L. M. Ball; University of North Carolina

2:10 54.03  
The Contribution of Butadiene to Smoking Induced Leukemia Mortality. M. R. Schulz, J. E. Korte, I. Hertz-Picciotto, L. M. Ball; University of North Carolina

1:30 - 3:00 pm

Room: Palo Verde 1

Ecological Risks: Multiple Stressors and Multiple Scales - Part 1

Co-Chairs: P. Sheehan and D. Versteeg

1:30 55.01  
Development of a Framework for Incorporation of Multiple Stressors in Ecological Risk Assessment. S. A. Ferenc, J. A. Foran; ILSI Risk Science Institute

1:50 55.02  
Participatory Decision-Making Based on Findings of Screening and Baseline Ecological Risk Assessments and Remedial Actions at the Former Fort Benjamin Harrison. B. Cornaby, D. McDaniel, C. Hadden, P. Patel, R. Blume-Weaver, L. Wright, J. Smith, B. Jones, K. Mason-Smith, A. Atkins, L. Tannebaum, M. Litwin, S. Sobiech; Science Applications International Corporation, Tennessee and Virginia; US Army, Indiana and Maryland; IDEM; US EPA, Chicago; US FWS

2:10 55.03  
Project Idris - The Relationships Between Environmental Levels of Pollutants and Their Biological Effects. I. Holoubek, L. Dusek, M. Machala, A. Kozubik, J. Helesic; Recetox-Tocoen & Associates, Czech Republic

2:30 55.04  
Radionuclides Transport in Natural Ecosystems: Spatial Dynamic Modeling for Risk Assessment. V. Taranenko, D. Burmistrov, I. Linkov; Urals Research Center for Radiation Medicine, Russia; Harvard University

1:30 - 3:20 pm

Room: Palo Verde 2

Symposium: Dermal Pathway Issues

Co-Chairs: A. Bunge and J. Kissel

1:30 56.01  
Application of Soil Contact Rates to Dermal Pathway Exposure Assessment. J. Kissel, J. Shirai, T. Garlock; University of Washington; Shannon and Wilson, Inc.

1:50 56.02  
Effect of Dose on Dermal Absorption from Liquid and Solid Vehicles. A. L. Bunge; Colorado School of Mines

2:10 56.03  
Relevant Skin Bioavailability Data for Risk Assessment. R. C. Wester; University of California, San Francisco

2:30 56.04  
Importance of Skin Concentration in Assessing Dermal Absorption Potential. J. McDougal

2:50 56.05  
The Effect of Skin Contact and Contact Frequency on Dermal Absorption from Soil and Dust. G. A. Keating, K. Bogen; Lawrence Livermore National Laboratory

1:30 - 3:00 pm

Room: Mohave

Symposium: Regulatory Improvement I: Risk Management Policy Issues

Chair: P. Noe

1:30 57.01  
Integrated Environmental Decision Making: New Tools and New Process for a New Generation. T. Miller, G. Matanoski, D. Barnes, S. Sanzone; US EPA, Washington, DC

1:50 57.02  
The Mandates for Balanced and Independent Peer Review Panels. S. Lewis; Exxon Biomedical Sciences, Inc.

2:10 57.03  
Cost Benefit and Risk - Risk Analyses in EPA's New Standards for Ozone and PM2.5. L. B. Wiener, G. E. Marchant; Duke University; Kirkland & Ellis

2:30 57.04  
Role of Comparative Risk in the Implementation of the Government Performance and Results Act. K. Kunzer, J. Solyst; Chemical Manufacturers Association

1:30 - 3:00 pm

Room: Pueblo

Symposium: Risk Assessment for Replicating Organisms

Chair: A. Ahl

1:30 58.01  
A Risk Assessment of the Pink Hibiscus Mealybug from the Caribbean. C. E. Miller, L. W. H. Chang; USDA, Riverdale, MD

1:50 58.02  
A Risk Assessment of *Salmonella Enteritidis* in Eggs and Egg Products. A. Hogue, E. Ebel, A. Baker, W. Schlosser, R. Morales, R. Whiting, R. McDowell; USDA, Washington, DC; University of Maryland; US FDA

2:10 58.03  
Special Issues in Risk Assessment Modeling for Living Organisms as Exemplified by Microbes in the Food Chain. R. Morales; University of Maryland

2:20 58.04  
Food Production, Processing, and Distribution as Selective Pressures for the Adaptation and Emergence of Bacterial Pathogens. A. J. Miller; US FDA, Washington, DC

1:30 - 3:00 pm

Room: Aztec

Alternative Dose-Response Models

Chair: A. Jarabek

1:30 59.01  
The Benchmark Approach for Continuous Endpoints: A Proposal for a Convenient Class of Models. W. Slob; RIVM, The Netherlands

1:50 59.02  
Sensitivity Analysis for Categorical Regression Modeling of Acute Reference Exposures. J. A. Strickland, S. H. Su; US EPA, RTP, NC; Sciences International, Inc.

2:10 59.03  
Structure of Dose-Response Models in Public Health Risk Analysis. C. D. Carrington; US Food and Drug Administration

2:30 59.04  
Bayesian Approach to the Treatment of Nonhomogeneous Data. E. L. Droguett, A. Mosleh; University of Maryland

1:30 - 3:00 pm

Room: Papago

Heavy Metal Exposure

Chair: W. Chappell

1:30 60.01  
A Summary of Lead Health Related Issues at the Bunker Hill Superfund Site. J. H. von Lindern, M. C. von Braun; TerraGraphics Environmental Engineering; University of Idaho

1:50 60.02  
Generic Risk and Fate Analysis for Mercury at Natural Gas Meters. L. J. N. Bradley, M. W. Gerath; ENSR

2:10 60.03  
Human Health and Ecological Risk Assessment for Uses of Steel Slag. K. A. Febling, D. M. Proctor, E. C. Shay; McLaren/Hart, Inc.

2:30 60.04  
Development of Risk-Based Concentrations of Heavy Metals in Inorganic Fertilizers. M. K. Jones, L. R. Shull, M. A. Bowland, S. A. Klasing, S. D. Wong; NewFields, Inc.; California Department of Food and Agriculture

3:30 - 5:20 pm

Room: Sonora

Approaches to Risk Assessment & Risk Management - Part 2

Chair: R. A. Williams

3:30 61.01  
A General Theory of Risk Redistribution. R. A. Williams; US FDA, Washington, DC

3:50 61.02  
The Development of Environmental Risk Management Methodology in New Zealand. F. Perrot, R. B. Keey; University of Canterbury, New Zealand

4:10 61.03  
Arizona's Soil Remediation Rule: An Integrated Risk Assessment/Risk Management Program. T. L. Copeland, T. A. Koelsch; K2 Enviro, Inc

4:30 61.04  
Applying Risk Assessment for Indicators of Sustainable Development. R. V. Kolluru; CH2M HILL

4:50 61.05  
The Integrated Risk Process: A Comprehensive Approach to Risk Science. J. E. Till, S. L. Sharp; Risk Assessment Corporation; BP Oil Company

3:30 - 5:00 pm

Room: Kachina

Symposium: Trust - Part 2

Chair: R. Löfstedt

3:30 62.01  
Who Do Citizens Believe When Controversy Strikes? Using a Validated Scale to Measure Credibility. C. W. Trumbo, K. A. McComas; University of Wisconsin; Cornell University

3:50 62.02  
Ten Propositions for Untangling Descriptive and Prescriptive Lessons in Risk Perception Findings. T. L. McDaniels; The University of British Columbia, Canada

4:10 62.03  
Sweden's Love Canal: Trust, Risk and the Hallandsas Disaster. R. E. Löfstedt; University of Surrey, United Kingdom

3:30 - 5:20 pm

Room: Saguaro 1

Stakeholder Involvement

Chair: A. Fisher

3:30 63.01  
Stakeholder Involvement in Assessing Regional Impacts from Climate Change. A. N. Fisher; Pennsylvania State University

3:50 63.02  
Scientists as Stakeholders in Community Risk Management Decisions: A Problem for Democratic Process. M. A. Kamrin, M. Aronoff; Michigan State University

4:10 63.03  
Making Decisions About Risk: Organizational Responsiveness to Risk Stakeholders. C. Chess; Rutgers University

4:30 63.04  
An Analysis of the Risk Communication Efforts Surrounding NASA's Cassini Mission to Saturn. J. L. Arvai (Student Awardee); The University of British Columbia, Canada

4:50 63.05  
The Bureaucrat, the Scientist, and the Citizen: A Risk Assessment of the Columbia River. D. Mercer (Student Awardee); University of Washington

3:30 - 5:20 pm

Room: Saguaro 2

Symposium: CRESO as an Experiment in Obtaining Information for Risk-Based Decision Making

Chair: B. D. Goldstein

3:30 64.01  
CRESO as an Experiment in a Risk-Based Approach to Obtaining Information for Decision Making. B. D. Goldstein, C. Powers, J. Moore, E. Faustman, A. Upton; UMDNJ-RWJ Medical School; IEHR; University of Washington

3:50 64.02  
Can Science and Risk Analysis Overcome Legacies? J. Karr; University of Washington

4:10 64.03  
Fish Consumption, Fish Advisories, and Risk from Fishing Along the Savannah River: Conflicting Information Base. J. Burger, M. Gochfeld; Rutgers University

4:30 64.04  
Exposure Assessment Research to Inform Decisions at Department of Energy Sites. L. F. McGrath, P. Georgopoulos; UMDNJ-RWJ Medical School

4:50 64.05  
Implications of Uncertainty for Establishing Protection Standards for Beryllium. T. K. Takaro, R. A. Ponce, E. M. Faustman, G. S. Omenn, S. M. Bartell; University of Washington; University of Michigan

3:30 - 5:20 pm

Room: Palo Verde 1

Ecological Risks: Multiple Stressors and Multiple Scales - Part 2

Chair: B. Cornaby

3:30 65.01  
Assessing the Ecological Risks of Dam Removal. P. J. Sheehan, R. J. Wenning, B. D. Wright, N. M. King, D. J. Paustenbach, D. M. Becklin; McLaren/Hart, Inc.; Sportfish Heritage

3:50 65.02  
Risk Analysis of BTEX from Frequent Low-Level Oil Spills in the Estuarine Environment. L. S. Zach, R. B. Keey; University of Canterbury, New Zealand

4:10 65.03  
Risk Assessment Models for the Prediction of the Levels of Residues of Veterinary Medicines in the Environment. L. A. Kelly, M. Taylor, M. Wooldridge; Veterinary Laboratories Agency, United Kingdom

4:30 65.04  
Perception of Wastewater Treatment Plant Failure on Environmental Discharge Compliance. J. A. Guy, G. K. Morse, J. N. Lester; Imperial College, United Kingdom

4:50 65.05  
Public Control of Ecological-Genetic Risks as a Constituent for Development of the Democratic Society in Russia after the Chernobyl Disaster. I. I. Suskov, A. I. Glouchchenko, V. A. Sheuchenko, B. T. Surikov; Russian Academy of Sciences, Russia



3:30 - 5:00 pm

Room: Palo Verde 2

Symposium: Use of Internet Resources for Risk Communication Objectives

Chair: W. Leiss

3:30 66.01  
An Evaluation of the Food Safety Network (FSnet), the Agriculture Network and the Animal Network as Risk Analysis Tools. D. A. Powell; *University of Guelph, Canada*

3:50 66.02  
Development of Issue Maps through Internet Searches in Developing a Risk Communication Strategy. G. M. Paoli, W. Leiss; *Decisionalysis Risk Consultants, Canada*

4:10 66.03  
Design for a Risk Communication Project Using Internet Sites, Illustrated by Endocrine Disruptors, Radio-Frequency Fields, and Other Risk Issue Domains. W. Leiss; *Queen's University, Canada*

3:30 - 5:00 pm

Room: Mohave

Symposium: Risk Assessment: A Burning Issue in Regulatory Reform

Chair: V. Sublet

3:30 67.01  
Regulatory and Legislative Issues Impacting Toxicology as the Basis for Risk Assessment. J. G. Keller; *Professional Consulting Service*

3:50 67.02  
Using the Courts to Improve the Accountability of Policy Decisions in Agency Risk Assessments. W. E. Wagner; *Case Western Reserve University School of Law*

4:10 67.03  
The Role of Exposure and Risk Assessment in New Regulatory Reforms: The Food Quality Protection Act. B. A. Shurdut, W. L. Chen; *Dow AgroSciences*

4:30 67.04  
Risk Assessment and Brownfields: A Tool for Evaluation and Communication. J. S. Applegate; *Indiana University School of Law*

3:30 - 5:00 pm

Room: Pueblo

Symposium: Chemical, Microbes and the Balance in Modeling Dose-Response

Co-Chairs: L. Rudenko and M. Coleman

3:30 68.01  
Transference Between Chemical and Microbial Dose-Response Modeling. D. Burmaster; L. Rudenko; *Alcon; Environ*

3:50 68.02  
Zero Tolerance for Any or All Microbial Pathogens? W. Long, B. Buchanan; *US FDA*

4:10 68.03  
Human Salmonellosis Model Informed by Animal Data. M. Coleman, H. Marks; *USDA/FSIS*

4:30 68.04  
Impact of Antibiotic Resistance on Dose-Response Modeling. B. Levin, M. Lipstitch; *Emory University*

3:30 - 5:20 pm

Room: Aztec

Evaluating Alternatives for Regulatory Decision Making

Chair: D. J. Paustenbach

3:30 69.01  
Values in Risk Science and Policy-Making. H. Douglas; *University of Puget Sound*

3:50 69.02  
Evaluating Radiation Protection Measures Using Socio-Cognitive Models. P. T. Allen; *University of Surrey, United Kingdom*

4:10 69.03  
Selecting the Right Risk in Selecting an Intermodal Transfer Site. F. C. Dilger; *Clark County Comprehensive Planning*

4:30 69.04  
Assessing Anticipatory Approaches to Climate Change Policy. K. Green; *Reason Public Policy Institute*

4:50 69.05  
Classifying and Managing Global Environmental Risks. O. Renn, A. Klinke; *Germany*

3:30 - 5:00 pm

Room: Papago

Symposium: Dose-Response Relationships in Occupational Cohort Studies

Chair: G. Goodman

3:30 70.01  
Using Monte-Carlo Methods to Assess the Impact of Uncertainties in Exposure on the Analysis of Dose-Response in Epidemiologic Studies. L. T. Stayner, S. J. Gilbert, R. J. Smith, A. J. Bailer, E. Garsbick; *National Institute of Occupational Safety and Health; Miami University; Brockton/West Roxbury VAMC; Harvard Medical School*

3:50 70.02  
Reanalysis of Data from a Study of Diesel Exhaust and Lung Cancer in Railroad Workers. K. S. Crump; *The K.S. Crump Group, Inc.*

4:10 70.03  
Interpretation of Non-Linear Dose-Response Curves: Lung Cancer in Workers Exposed to Arsenic Via Inhalation. I. Hertz-Picciotto; *University of North Carolina*

4:30 70.04  
Dose-Response Relationships for Cancer Outcomes Derived from Occupational Epidemiologic Studies: How Useful for Low-Dose Extrapolation? G. Goodman; *Human Health Risk Resources*

WEDNESDAY, DECEMBER 9

8:30 am-3:00 pm  
Technical Sessions

10:00-10:30 am  
Coffee Break

9:45 am-Noon  
Exhibition Open

Noon-1:30 pm  
Lunch (On Own) - Cash Basis Cookout  
(Weather Permitting)

DON'T FORGET THESE DATES!

For special hotel rates register by November 6.

To save on registration fees preregister by November 6.

10:30 am - Noon

Room: Saguaro 1

Symposium: Drinking Water:  
Communication and Policy

Chair: B. B. Johnson

10:30 71.01  
Cryptosporidium Risk Communication for  
Drinking Water Utilities. *M. J. Small, B. Fischhoff, E. A. Casman, C. R. Palmgren; Carnegie Mellon University*

10:50 71.02  
Communicating to Policymakers: Global  
Environmental Change and Cryptosporidium  
in Drinking Water. *A. Bostrom; Georgia Institute of Technology*

11:10 71.03  
Public Response to the Notion of Drinking  
Water Quality Reports: Initial Survey Data. *B. B. Johnson; New Jersey Department of Environmental Protection*

10:30 am - Noon

Room: Saguaro 2

Role of Risk Assessment in Resolving  
Liability Disputes

Chair: S. Poulter

10:30 72.01  
A Case Study of Risk-Based Management  
Decisions Using Individual Risk Appraisal.  
*C.A. Williams, A. Rawa, A. Wiman, R.W. Freeman; Ecology and Environment, Inc.*

10:50 72.02  
Mediation and Court Litigation: The Social  
Legitimacy of Underlying Fairness Discourses.  
*C. Zwetkoff; University of Liege, Belgium*

11:10 72.03  
Risk Assessment as a Liability Allocation Tool.  
*B. L. Murphy; IT Corporation*

10:30 am - Noon

Room: Palo Verde 1

Communicating Health Risk

Chair: S. J. Byram

10:30 73.01  
Strategies for Improving Communications  
with Health Consumers Using Mental Models  
of Breast Cancer and Mammography. *S. J. Byram, B. Fischhoff, L. Schwartz, S. Woloshin; Battelle, PNNL; Carnegie Mellon University; VA Medical Center, Vermont*

10:50 73.02  
Assessing Fear, Threat, and Efficacy Percep-  
tions in Health Care Workers Using a Dual  
Theory Perspective. *B. T. Day; West Virginia University*

11:10 73.03  
Communicating Public Health Risks from the  
Bottom-Up: A Look at the South and South-  
west Philadelphia Environmental Health  
Characterization Study. *M. A. Fox (Student Awardee), J. S. Litt; Johns Hopkins School of Hygiene and Public Health*

11:50 73.04  
Effects of Information and Procedural Guide-  
lines on Lay Rankings of Health and Safety  
Risks. *K. M. Morgan; Carnegie Mellon University*

10:30 am - Noon

Room: Palo Verde 2

Public Perception - Public Participa-  
tion - Part 1

Chair: P. Locke

10:30 74.01  
A Generalization of Rankings for Hazardous  
Waste Disposal/Management Factors by  
County and Economic. *M. A. Khan, B. Williams; Environment, Behavior, and Risk Research*

10:50 74.02  
Empirical Research Strategies for Investigat-  
ing Participatory Risk Evaluation. *T. Nyerges, C. Drew, N. Hedley, C. Hendricksen; University of Washington*

11:10 74.03  
Integrated Framework for Collaborative Risk  
Evaluation Using Geographic Information  
Systems. *C. H. Drew, T. L. Nyerges; University of Washington*

11:30 74.04  
Risk Perception and Risk Regulation: Major  
Industrial Hazards and the Seveso II Direc-  
tive. *A. M. Brazier, G. P. Walker; Staffordshire University, United Kingdom*

10:30 am - 12:20 pm

Room: Grand Canyon

Reconsidering Cancer Risk

Co-Chairs: P. C. Chrostowski  
and D. J. Paustenbach

10:30 75.01  
Background Risks from Dietary Exposure to Di- (2-Ethylhexyl) Phthalate (DEHP): Implications of Regulations in the Context of California's Proposition 65. D. B. Mathur, D. G. Dodge, D. J. Paustenbach; McLaren/Hart Inc., California

10:50 75.02  
Background Risks Associated with Exposure to N-Nitrosodimethylamine (NDMA): Is Something Amiss in the Regulation of this Chemical? P. J. Sheehan, D. Mathur, D. Dodge, D. J. Paustenbach; McLaren/Hart, Inc., California

11:10 75.03  
Re-evaluation of the Potential Carcinogenicity of Lindane. P. C. Chrostowski, G. Charnley; The Weinberg Group, Inc.

11:30 75.04  
Streamlining the Approach for Updating Cancer Potency Factors. S. Tamburullo, C. R. Kirman, M. L. Gargas; McLaren Hart, Inc., Ohio

10:30 am - Noon

Room: Navajo

Food Consumption - Poster Platform

Chair: T. W. Simon

76.01 Estimating Subsistence Ingestion Rates of Moose and Caribou in a Remote Village in Alaska. A. L. Veilleux, T. J. Garlock, P. D. Birkner; Shannon & Wilson, Inc.

76.02 Exposure Assessment of Verotoxin-Producing E. Coli 0157 Via Beef and Beef Products in the Netherlands. M. J. Nauta, A. E. Heuvelink; RIVM, The Netherlands

76.03 Alaska Subsistence Human Health Risk Assessment: Food-Chain Transfers. L. D. Himmelbauer, S. Bartell, S. Haness, B. Nobmann, R. Ponce; Alaska Dept. of Environmental Conservation; IDM Consulting

76.04 Estimating Long-Term Food Consumption Rates from Short-Term Data: A Numerical Study. A. S. Kao, D. K. Waylett; Environ Corporation

76.05 Safety Assessment to the Long-Term Exposure of Benzenhexachloride by Korean-Cabbage Ingestion. H. Lee, E. Yoon, S. Choi, K. S. Park, K. P. Won; Korea Food and Drug Administration, Korea.

76.06 Subsistence Fishing in the Southeast: Fish Consumption Rates Derived from Two Exposure Surveys. T. W. Simon; US EPA, Atlanta, GA

10:30 am - Noon

Room: Hopi

Symposium: Toward a Quantitative Definition of the RfD/C - Part 1

Chair: A. H. Stern

10:30 77.01  
Why Do We Need a More Quantitative Definition of the RfD/C? A. H. Stern; New Jersey Department of Environmental Protection

10:50 77.02  
Characterizing the Reference Dose/Minimal Risk Level/Allowable Daily Dose in a Quantitative Framework of Uncertainty and Variability. P. S. Price, R. E. Keenan; McLaren-Hart, Inc., Maine

11:10 77.03  
An Operational Redefinition of the Reference Dose. J. C. Swartout; US EPA, Cincinnati, OH

11:30 77.04  
Statistics and Judgment of Critical Effect in the Determination of RfDs. M. Dourson; TERA

10:30 am - Noon

Room: Pima

Symposium: Performing Risk Assessments When Uncertainty and Controversy are Dominant: EMF's as a Test Example - Part 1

Chair: R. L. Goble

10:30 78.01  
Just Say No: The Risks of Risk Assessment. P. Slovic; Decision Research

10:50 78.02  
The Issue of Electromagnetic Fields and Cancer - Exploration of Three Potential Paths to Resolution. D. B. Hattis; Clark University

11:10 78.03  
Can Risk Assessments Conclude That There is No Risk? D. M. Kammen, R. L. Goble, D. B. Hattis; Princeton University; Clark University

11:30 78.04  
Managing Uncertainty. R. E. Kasperon; Clark University

10:30 am - Noon

Room: Apache

Symposium: The Relationship of Economics and Ecological Risk Assessment

Chair: M. A. Tumeo

10:30 79.01  
The Role of Economics in Ecological Risk Assessment: An Overview. M. E. Smith; USDA, Washington, DC

11:30 79.02  
Defining the Interface Between Economics and Risk Assessment. M. A. Tumeo; USDA, Cleveland State University

10:50 79.03  
How Economic Analysis Can Better Intersect with Risk Assessment: What Needs to be Done? R. Meekhof; USDA, Washington, DC

11:10 79.04  
A New Paradigm for Economics in Environmental Protection. H. Stallworth; US EPA, Washington, DC

WEDNESDAY, DECEMBER 9

8:30 am-3:00 pm  
Technical Sessions

10:00-10:30 am  
Coffee Break

9:45 am-Noon  
Exhibition Open

Noon-1:30 pm  
Lunch (On Own) - Cash Basis Cookout  
(Weather Permitting)

REGISTRATION CANCELLATION/  
SUBSTITUTION POLICY

Requests for refunds will be honored if received in writing by November 6. All refunds will be issued after the meeting and are subject to a \$50 processing fee. No refunds will be issued to No-Shows. Requests for refunds must be made to the Secretariat in writing. Substitutions may be made any time prior to the meeting.

1:30 - 3:00 pm

Room: Saguaro 1

Symposium: Risk and Stigma

Chair: P. Slovic

1:30 80.01  
Stigma and the Social Amplification of Risk:  
A Framework. R. E. Kasperson, J. X.  
Kasperson; Clark University

1:50 80.02  
The Stigmatization of Nuclear Science and  
Technology. J. Flynn; Decision Research

2:10 80.03  
Coping with Risk-Induced Stigma: Challenges  
and Opportunities. H. C. Kunreuther, P.  
Slovic; University of Pennsylvania; Deci-  
sion Research

1:30 - 3:00 pm

Room: Saguaro 2

Inhalation Exposure and Markers

Chair: P. Locke

1:30 81.01  
Developing Distributions of Annual Average  
Concentration with Dependency Among Daily  
Values. A. C. Cullen, C. S. Bretberton; Uni-  
versity of Washington

1:50 81.02  
US-Slovak Cooperation in Environmental  
Health Risk Assessment: Personal Exposure  
to Particles and NO<sub>2</sub> in Banska Bystrica,  
Slovakia. K. Hrubá, E. Mihalikova, M.  
Brauer, E. Fabianova, A. Plzíkova, M.  
Lendacka, P. Miskovic, J. Vandenberg, A.  
Cullen; Specialized State Institute of Public  
Health, Slovakia; The University of British  
Columbia, Canada; US EPA, RTP, NC; Uni-  
versity of Washington

2:10 81.03  
Linking Molecular Epidemiology and Risk  
Science: Applications for Exposure Assessment.  
P. Locke, T. Burke, C. Rohde, J. Samet, J.  
Groopman; Environmental Law Institute;  
Johns Hopkins University

2:30 81.04  
Utility of Various Environmental Tobacco  
Smoke (ETS) Constituents as Markers for ETS  
Exposure and Impact of Away-From-Work  
Exposure to ETS on Workplace Exposure. J.  
S. LaKind, D. Q. Natman, R. A. Jenkins, M.  
E. Ginevan, R. G. Tardiff; The Sapphire  
Group, Inc.; The Johns Hopkins University;  
Oak Ridge National Laboratory; M.E.  
Ginevan and Associates

1:30 - 3:00 pm

Room: Palo Verde 1

Symposium: Risk Education: What's  
Needed? What's Available? Why  
Should You Get Involved?

Chair: D. W. North

1:30 82.01  
Exploring Environmental Issues: Focus on  
Risk. L. Iozzi, F. Gallagher, A. Messinger, L.  
Soyka; Rutgers University; NJ Division of  
Parks and Forests; Project Learning Tree

1:50 82.02  
Ecological Risk Assessment Simulation and  
Education. R. Menning; American Indus-  
trial Health Council

2:10 82.03  
Teaching Risk Assessment to Children. B.  
Steinberg, B. Schlegel, D. Shields, A. R.  
Gotsch, L. Weidner; Environmental and Oc-  
cupational Health Sciences Institute.

2:30 82.04  
Risk Education: Where Do We Go From Here?  
M. Zint; University of Michigan

1:30 - 3:00 pm

Room: Palo Verde 2

Public Perception - Public Participa-  
tion - Part 2

Chair: A. Fisher

1:30 83.01  
Are Stakeholder Involvement Processes Demo-  
cratic? The Answer is a Resounding, "It De-  
pends!" O. R. Ehart; Next Wave Institute

1:50 83.02  
Citizenship and Participation: A Case Study  
from the Canadian Blood Transfusion Ser-  
vice. W. Dean; University of Alberta,  
Canada

2:10 83.03  
Risk Assessment of Oil Sands Projects: Shap-  
ing the Assessment to Answer Relevant Ques-  
tions. M. G. Rankin, J. Gulley, S. McKeown,  
L. Mucklow, I. Smith; Golder Associates Ltd,  
Canada

2:30 83.04  
Consumers' Knowledge and Perceptions of  
Alternative Agricultural Systems: Survey Re-  
sults. P. R. D. Williams (Student Awardee),  
J. K. Hammitt, G. M. Gray; Harvard School  
of Public Health

1:30 - 3:00 pm

*Room: Navajo*

Symposium: Time as a Risk Metric: Incorporation into Decision Making at DOE Sites

*Chair: B. Goldstein*

1:30 84.01  
Relating the Fundamentals of Human Risk Perception to Waste Management at DOE Sites. *C. Powers; Environmental and Occupational Health Sciences Institute.*

1:50 84.02  
Perception of Time as a Metric in Risk Characterization. *B. Williams, B. D. Goldstein; University of Arizona; EOHSI*

2:10 84.03  
Implications of Improved Understanding of Soil Interactions to Risk Assessment. *D. Kosson, P. Georgopoulos; Rutgers University; EOHSI*

2:30 84.04  
New Approaches to Temporal Issues in Human Health Risk Assessment. *E. M. Faustman, S. M. Bartell, R. A. Ponce, G. van Belle, W. C. Griffith; University of Washington*

1:30 - 3:00 pm

*Room: Hopi*

Symposium: Toward a Quantitative Definition of the RfD/C - Part 2

*Chair: A. H. Stern*

1:30 85.01  
A Straw Man Proposal for a Quantitative Definition of the RfD. *D. B. Hattis; Clark University*

1:50 85.02  
Experience in the Priority Substances Program - Implications for Definition of Reference or Tolerable Dose/Concentration. *M. E. Meek; Health Canada*

2:10 85.03  
Consideration of Sensitive Subgroups in Noncancer RfD and RfC Assessments. *J. S. Giff, G. L. Foureman; US EPA, RTP, NC*

1:30 - 3:00 pm

*Room: Pima*

Symposium: Performing Risk Assessments When Uncertainty and Controversy are Dominant: EMF's as a Test Example - Part 2

*Chair: R. Kasperson*

1:30 86.01  
Risk Assessment Guidelines for EMF's. *R. L. Goble, D. B. Hattis, D. Golding, H. S. Brown, D. Kammen, R. E. Kasperson, S. Ratlick, P. Slovic, A. Smith; Clark University; Princeton University; Decision Research; University of California, Berkeley*

1:50 86.02  
Risk Assessment Guidelines for EMF's: A California Perspective. *R. Neutra, V. Del Pizzo; California Department of Health Services.*

2:10 Discussion

1:30 - 3:00 pm

*Room: Apache*

Methods in Probabilistic Risk Assessment

*Chair: J. Swartout*

1:30 87.01  
Constrained Mathematics and the Repeated Variable Problem. *J. A. Cooper, S. Ferson, D. K. Cooper; Sandia National Labs; Applied Biomathematics; Analogy, Inc.*

1:50 87.02  
A Simulation-Optimization Approach to Cost-Effective Sampling and Cleanup of Contaminated Areas. *L. A. Cox, K. N. Paige; Cox Associates*

2:10 87.03  
Uncertainty Distribution Development for Probabilistic Risk Assessment. *Z. Huang, J. Swider; The Boeing Company*

2:30 87.04  
Integrating Demographics, Exposure Factors & Susceptibility in Time-Series Probabilistic Risk Models. *J. Swartout, G. Rice; US EPA, Cincinnati, OH*

Monday, Dec 7, 3-3:30 pm  
AND

Tuesday, Dec 8, 10-10:30 am

Room: Coronado/Cortez

# Poster Session 1

P1.01 Cross-Agency Collaboration for Chemical Mixtures and Multistressor Risk Assessment. *L. G. Cain; Science Applications International Corporation*

P1.02 Risk Assessment for Petroleum Hydrocarbons Using Alaska Draft Guidance. *C. J. Mattia, D. Y. Chong, W. H. Curley; ENTRIX, Inc.*

P1.03 Use of Bioavailability Data for the Establishment of Alternate Cleanup Levels for Environmental Media. *J. A. Bland, E. V. Sargen, L. Tyls, M. V. Ruby, P. Chrostowski, T. Bingman; Merck and Co, Inc.; Exponent; The Weinberg Group Inc; E.I. du Pont Chemicals.*

P1.04 Derivation of Risk-Based Cleanup Levels for Noncarcinogens: Methods and Science Policy Implications. *S. Erdal, J. MacFarlane, EA Engineering, Science, and Technology, Inc., Bellevue, WA and Hunt Valley, MD*

P1.05 Review of Methodologies for Remedial Standards in New England: Surface Water Protection Criteria. *J. S. Merkle, T. R. Kline; Techlaw, Inc., Alpharetta, GA and Boston, MA*

P1.06 Analysis of Risk Management Framework through Revising Process of Environmental Quality Standards. *K. Yamazaki; Environment Agency of Japan*

P1.07 Application of Optimization Theory in Environmental Risk Assessment and Decision Analysis. *M. A. Randall; University of New Mexico*

P1.08 Derivation of a Drinking Water Action Level. *M. Whittaker, L. Bestervell, G. Ball; ENVIRON Corp.; NSF International*

P1.09 Benchmark Concentration (BMC) Modeling Versus the NOAEL/LOAEL Approach: A Case Study with Methylene Diphenyl Diisocyanate. *M. M. Greenberg, J. Giff; US EPA, RTP, NC*

P1.10 Dose-Response Modeling for Nitrate and Chloral Hydrate: Use of Data from Sensitive Subpopulations. *L. T. Haber, B. C. Allen, A. Bathija; TERA; ICF Kaiser; US EPA, Washington, DC*

P1.11 Overview of the Lake Wabamun Science and Public Consultation Program. *S. M. Swanson, R. Robinson, M. Johns; Golder Associates, Canada; TransAlta Utilities, Canada*

P1.12 A Data Based Comparison of Single Species and Model Ecosystems Sensitivity. *D. J. Versteeg, S. E. Belanger, G. J. Carr; The Proctor & Gamble Company; Ivorydale Technical Center; Cincinnati, OH*

P1.13 Estimation of Hazardous Concentrations from Bimodal Species Sensitivity Distributions using Bayesian Statistics. *J. S. Jaworska, T. Aldenberg; Procter & Gamble, Belgium; RIVM, The Netherlands*

P1.14 Simulation of Attention and Resources Allocation in Risk Ranking. *J. Long, B. Fischhoff, K. Florig, G. Morgan, M. Dekay, P. Fischbeck; Carnegie Mellon University*

P1.15 RBCA Protocol for Miami International Airport. *S. P. Pack, A. Khan; SAIC*

P1.16 The Good and Bad Sides of RBCA. *D. Elsenbeimer, D. Huff; Braun Intertec, Minneapolis, MN and La Crosse, WI*

P1.17 Risks Posed by PCBs in Non-Liquid Materials at Three Air Force Bases. *K. Mitchell, K. Scruton, S. Just, T. Klaff, T. Fagan; Parsons Engineering Science, Norcross, GA and Denver, CO*

P1.18 Development of Generic Recreational Soil Cleanup Criteria. *R. S. Berger, B. C. Venman; Environmental Consulting & Technology; Neyer, Tiseo, and Hindo.*

P1.19 Multimedia Modeling and Risk Assessment. *J. L. Regens, K. O. Obenshain, C. Travis; Tulane University Medical Center; Informatica International*

P1.20 A Comparative Risk Assessment Method to Evaluate Impacts of Portuguese Industrial Waste Disposal. *J. A. Shatkin, J. M. Palma-Oliveira, C. A. Patton, C. Saraiva; Menzie-Cura & Associates, Inc.; EcoSaude, Portugal and University of Portugal, Lisbon*

P1.21 Cancer Risks to Adult On-Site Workers from Soil Emissions of Volatile Organic Compounds at the Lawrence Livermore National Laboratory. *V. R. Dibley, T. M. Carlsen; Lawrence Livermore National Laboratory*

P1.22 Assessment and Management of Human Health Risk Due to Dioxin-Like Compounds in Japan. *J. Nakanishi, K. Yoshida; Yokohama National University, Japan*

P1.23 Methodology Issues in Evaluating Cumulative Risks in the Chicago Metropolitan Area. *J. P. Butler, L. A. Nieves, H. H. Hartmann, C. Braverman; Argonne National Lab; US EPA, Chicago, IL*

P1.24 Ambient Air Quality Monitoring and Human Risk Assessment in Slovakia. *I. Holoubek, P. Cupr; Recetox-Tocoen & Assoc., Czech Republic*

P1.25 Review of Storm Water Monitoring Results and Evaluation of Permit Effectiveness. *R. M. Rollins, R. W. Canavan, K. K. Chellman; Watershed Advisory Group*

P1.26 Benefits and Drawbacks of Multi-Site Agreements Under PA's Land Recycling Program: A Case Study. *K. C. Fromme, J. J. Mahfood; Key Environmental, Inc.*

P1.27 Probabilistic Risk Based Closure. *L. D. Braddy, S. B. Ellingson; ARCADIS Geraghty & Miller*

P1.28 Evaluation of the Physical Hazards Associated with Two Remedial Alternatives at a Superfund Site. *P. K. Scott, A. Pittignano, M. Fredrick, B. L. Finley; McLaren/Hart, Inc.; Chemical Land Holdings*

P1.29 Risk Assessment Technique in Deciding Problems of Environment and of Human-Health in FSU and Europe. *V. A. Eremenko, D. C. Bley, J. Droppo, Jr; Kurchatov Institute, Russia; Buttonwood Consulting, Inc.; Battelle Pacific Northwest National Laboratory*

P1.30 Radioactive Waste Management in France: A Technical and Responsible Project for Long-Term Management. *Y. Kaluzny, D. Auverlot, E. Boissac, G. Ouzounian; ANDRA, France*

P1.31 Top Ten Risk Issues at Federal Facility Hazardous Waste Sites. *C. A. Forget, C. A. Davis, T. L. Walker; CENWO-HX*

P1.32 Feasibility of Probabilistic Methods in Risk Assessment of Industrial Chemicals in the EU. *T. Jager, M. G. J. Rikken, P. Van der Poel, T. G. Vermeire; RIVM, The Netherlands.*

P1.33 Strontium-90 Radiation Standards for Environmental Cleanup. *W. C. Griffith, S. B. Curtis, S. M. Bartell, E. M. Faustman; University of Washington; Fred Hutchinson Cancer Research Center*

P1.34 Revising Strontium-90 Radiation Standards for Environmental Cleanup. *W. C. Griffith, S. B. Curtis, S. M. Bartell, E. M. Faustman; University of Washington; Fred Hutchinson Cancer Research Center*

P1.35 Developing Risk-Based Screening Levels at Petroleum Release Sites. *D. J. Vorhees, W. H. Weisman; Menzie-Cura & Associates, Inc.; US Air Force*

P1.36 Comparing Cleanup Costs to Risks for Selected USAF Pump and Treat Remediation Systems. *E. Maull, B. West, T. Jasek; US Air Force*

P1.37 Economic Implications of Building a New Tritium Accelerator at the Savannah River Nuclear Weapons Site. *M. Greenberg, M. Frisch, L. Solitare, K. Lowrie; Rutgers University*

P1.38 Probabilistic Methods of Risk Estimating and Risk Control. Minimizing Cost of Acceptable Risk Achievement. *B. S. Fleishman; Independent Risk Analysis Consultant*

## LETTERS OF INVITATION

On request, the conference office will be pleased to send an official letter of invitation to participants who wish to attend. These letters are intended to assist participants in obtaining travel funds or visa. They do not constitute a commitment on the part of the conference to provide financial support.

# SRA – 1998 Annual Meeting — Registration Form

## December 6-9, Phoenix, AZ

SRA Member # SRA \_\_\_\_\_

**PLEASE PRINT CLEARLY**

*Preregistration Deadline: Friday, November 6*

Name: (For Badge) \_\_\_\_\_

Affiliation: (For Badge, Limit to 15 Characters and Spaces) \_\_\_\_\_

Mailing Address: (Include Full Name of Business Affiliation) \_\_\_\_\_

City: \_\_\_\_\_ State/Country: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ FAX: \_\_\_\_\_ Email: \_\_\_\_\_



### FEES

	Preregistration	After 11/6/98
<input type="checkbox"/> Member	\$235.00	\$285.00
<input type="checkbox"/> Non-Member*	\$340.00	\$390.00
<input type="checkbox"/> Student	\$ 85.00	\$120.00

**Additional Luncheon Tickets** (*Tickets for Mon & Tues Lunches are included with each meeting registration*)

<input type="checkbox"/> Monday <input type="checkbox"/> Tuesday	\$ 25.00	\$ 25.00
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**Workshops** — Sunday, December 6

<input type="checkbox"/> Workshop 1	\$260.00	\$320.00
<input type="checkbox"/> Workshop 2	\$260.00	\$320.00
<input type="checkbox"/> Workshop 3	\$260.00	\$320.00
<input type="checkbox"/> Workshop 4	\$260.00	\$320.00
<input type="checkbox"/> Workshop 5	\$260.00	\$320.00
<input type="checkbox"/> Workshop 6	\$130.00	\$160.00

**Tours:**

	Preregistration	On-Site Fees	Total
<input type="checkbox"/> Jeep Tour (Saturday, 12/5) # of Tickets _____ X \$70.00	# of Tickets _____ X \$76.00		
<input type="checkbox"/> Horseback Ride (Sunday, 12/6) # of Tickets _____ X \$55.00	# of Tickets _____ X \$63.00		
<input type="checkbox"/> Sedona Excursion (Sunday, 12/6) # of Tickets _____ X \$64.00	# of Tickets _____ X \$72.00		
<input type="checkbox"/> Heard Museum Tour (Monday, 12/7) # of Tickets _____ X \$52.00	# of Tickets _____ X \$60.00		
<input type="checkbox"/> Taliesin West Tour (Tuesday, 12/8) # of Tickets _____ X \$52.00	# of Tickets _____ X \$60.00		

Total \_\_\_\_\_

\*Includes a 1 year SRA Membership- available to **1st time members ONLY**.

### PAYMENT

☐ VISA ☐ MasterCard ☐ American Express Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_

Cardholder Name \_\_\_\_\_ Signature \_\_\_\_\_

Cardholder Billing Address \_\_\_\_\_

OR make check payable to and mail to:

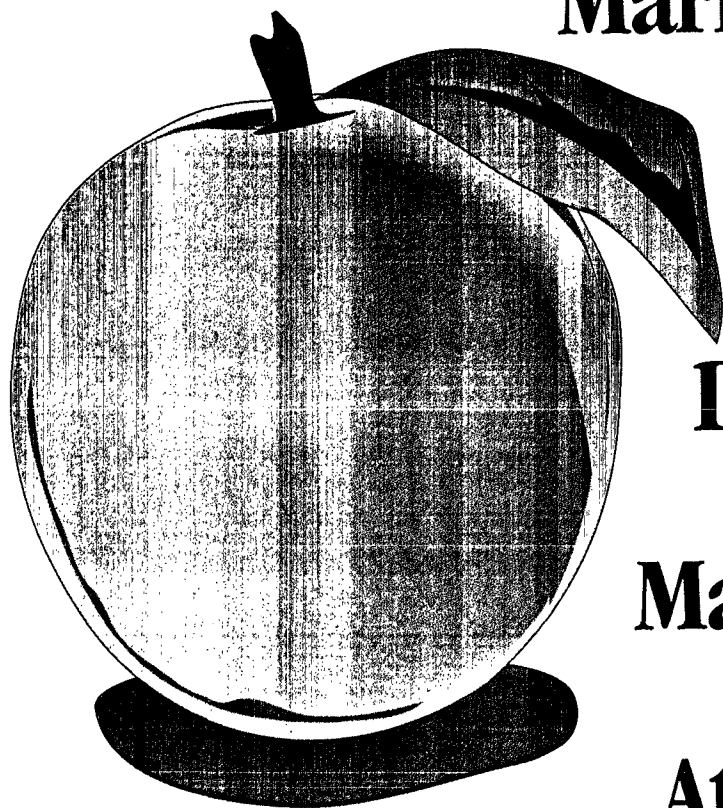
**Society for Risk Analysis**  
1313 Dolley Madison Blvd., Suite 402  
McLean, VA 22101

**If FAXing, (703) 790-2672, registration with credit card payment, please DO NOT mail original**

**Requests for refunds will be honored if received in writing by November 6.** All refunds will be issued after the meeting and will be subject to a \$50.00 processing fee.

K  
SRA





**Mark Your Calendar!**

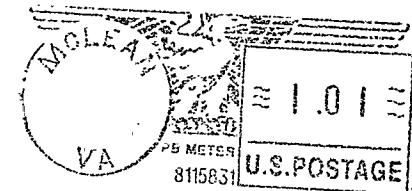
**SRA '99**

**December 5-8**

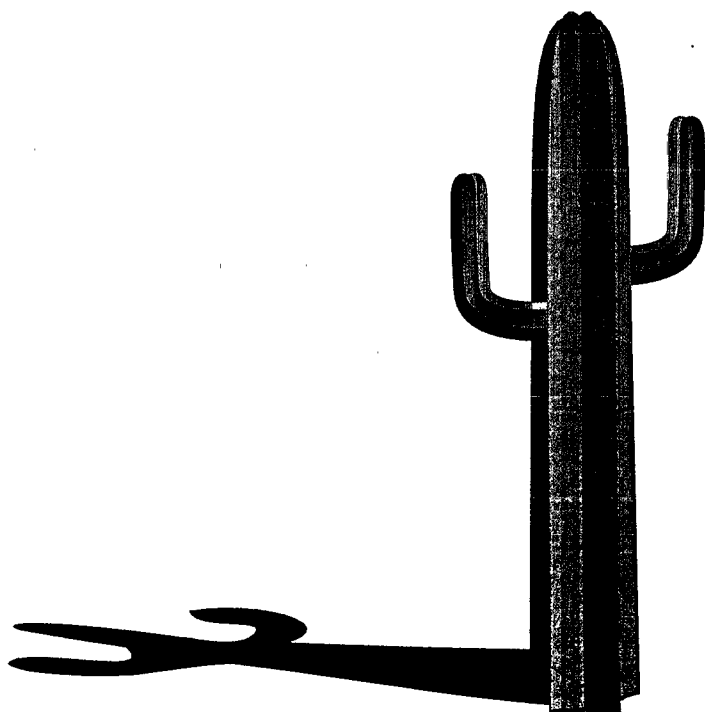
**Marriott Marquis**

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1313 Dolley Madison Blvd.  
Suite 402  
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ASSESSING AND MANAGING RISKS IN A  
DEMOCRATIC SOCIETY



PHOENIX, ARIZONA

Catherine McCracken  
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